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ON

THE ANATOMY AND PATHOLOGY OF THE RARER FORMS OF HERNIA.

Delivered at the Royal College of Surgeons of England on Feb. 19th, 21st, and 23rd, 1900,

BY B. G. A. MOYNIHAN, M.S. LOND., F.R.C.S. ENG.,

ASSISTANT SURGEON TO THE LEEDS GENERAL INFIRMARY; CONSULTING SURGEON TO THE SKIPTON AND DISTRICT HOSPITAL, ETC.

LECTURE I.

Delivered on Feb. 19th.

BILOCULAR HERNIA, INCLUDING INGUINO- AND CRURO-PROPERITONEAL AND INTERSTITIAL HERNIA.

MR. VICE-PRESIDENT AND GENTLEMEN,—I propose to deal in the lectures, which by the grace of the council of this College I have again the honour of delivering, with some of the rarer forms of hernia. In my first lecture I shall consider that form which is commonly called "properitoneal." My second lecture is concerned with the variety first described by Sir Astley Cooper as "encysted hernia." In the third lecture I shall discuss hernia of the bladder.

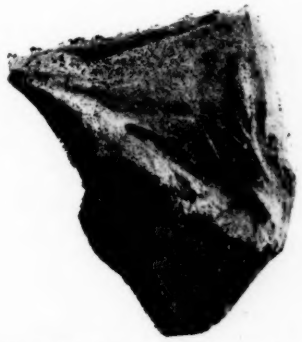
The term "properitoneal hernia" is reserved for those cases which fulfil the following conditions: (1) the hernial sac has two loculi; (2) the inner loculus lies between the peritoneum and the fascia transversalis (Fig. 1); (3) the outer loculus lies in the inguinal or

FIG. 1.

Properitoneal hernia seen from behind. Backward and outward diverticulum of the sac. An inguinal hernia was strangulated; operation was performed, and the hernia was found to be congenital. Reduction was effected. After death it was seen that reduction had occurred into a sac, shown in the figure, below the internal abdominal ring, outside the peritoneum. The specimen is labelled "Reduction in Mass." The testis is retained. (St. Bartholomew's Hospital Museum, No. 2117.)

crural ring, or in rare cases between the layers of the abdominal wall; and (4) both loculi open into the abdomen by a single orifice, the "ostium abdominale." By an interstitial hernia is understood a hernia which fulfils the following conditions: (1) the hernial sac has two loculi; (2) the inner, upper loculus lies (*a*) between the internal and external oblique (Fig. 2) or (*b*) between the external oblique and the skin (Fig. 3); (3) the outer, lower loculus lies in the inguinal canal; and (4) the upper loculus opens into the lower, in some cases close to, in other cases a little distance from, the internal abdominal ring. The form (*a*), where the mural sac lies between the internal and external oblique, was first described by Goyrand in 1836 as hernia inguino-interstitialis and by Boyer as hernia intra-inguinalis. Isolated cases, however, had been previously recorded by Bartholin, Petit, Cooper, Hesselbach, Parise, and others. It was specially investigated and described by Rumpel who collected 57 recorded cases. The form (*b*), where the sac lies external to the muscles, was described by Kuster as hernia inguino-superficialis. A sac lying between the transversalis muscle and fascia was described in one

FIG. 2.



The inguinal region of a patient who suffered from right interstitial hernia. The rod leads to a large diverticulum from the sac, lying under the external oblique. The sac can be seen in the upper cut edge of the specimen. (St. Bartholomew's Hospital Museum, No. 2157A.)

case by Hartung, but the observation has never been repeated or confirmed.

I think that all these forms of hernia might with advantage be included under the title "Bilocular Hernia." The name is appropriate and accurate. The term "bilocular" is applied to a form of hydrocele which is probably very closely related, from the developmental point of view, with these

FIG. 3.

Interstitial hernia. Extra-parietal form. The sac is hour-glass in shape, the constriction being situated at the external ring close below which in the lower sac is seen the undescended testis. The upper sac extends upon the anterior abdominal wall for a distance of two inches above the widely-dilated internal abdominal ring. "T. S., aged 36 years, was admitted under Mr. Cock with symptoms of strangulated hernia of 24 hours' duration. He was found to have one tumour in the scrotum and another in the groin. The scrotal tumour was reduced by taxis. On the following day the patient died and at the autopsy nearly a foot of ileum was found strangled in the upper sac." (Guy's Hospital Museum, No. 1120.)

forms of hernia. The apt terms "intra-parietal," "inter-parietal," and "extra-parietal" for the sacs within, between and ouside the muscles, are employed by Rose and Carless. The inguino- and cruro-properitoneal forms were first

described in 1851 by Parise. Streubel, in a well-known monograph, referred to 14 cases, but the chief work is, without question, that of Krönlein, published in 1880. He collected and analysed 23 cases recorded up to that time and very carefully described and defined this ill-understood form of hernia. W. Breiter, a pupil of Krönlein, collected in 1895 a further series of 36 unquestioned cases. Many cases have doubtless occurred, but have been misread by those who operated or performed the post-mortem examinations. In my book on "Retro-peritoneal Hernia," I analysed[1] a series of cases that had been accepted by Jonnesco as cases of hernia into a retro-colic fossa. Certain of these cases occurring in connexion with retention of the testis are, I venture to think, forms of properitoneal hernia that have lacked appreciation. The cases of Fages and Parise are examples.

In properitoneal hernia the inner sac may have one of three positions: (1) it may pass upwards and outwards from the internal abdominal ring to the anterior superior spine (Fig. 1); (2) it may pass directly backwards and occupy the inner part of the iliac fossa near the brim of the pelvis (Fig. 4); or (3) it may pass downwards and inwards into

FIG. 4.

Properitoneal hernia. Backward diverticulum from the sac. A congenital inguinal hernia, which was strangled and reduced. After death it was seen that reduction had taken place into a sac lying between the peritoneum and the transversalis fascia. The case is labeled "Reduction in mass." (Guy's Hospital Museum, No. 1134.)

the true pelvis lying by the side of, or in front of, the bladder (Fig. 5). Variety I. has been described as hernia inguinalis intra-iliaca, Variety III. as hernia inguinalis ante-vesicalis (St. Bartholomew's Hospital Museum, No. 2118). The outer or lower sac may be within the inguinal canal, or have reached the scrotum, or in rare cases may be interstitial. The right side is more commonly affected than the left. In the 59 cases of Krönlein and Breiter 33 were on the right side, 20 were on the left, and in six no mention of the side was made. Now Engel, Krönlein, and others have shown that the descent of the testicle is later on the right side than on the left and that the right processus vaginalis remains unclosed for some time after the fusion process is complete on the left side. In a proportion, which is certainly striking, of the recorded cases there has been more or less imperfect descent of the testicle. In Breiter's 36 cases there was retention in 14, nine times on the right side, four times on the left side, and in one case the side is not mentioned. In one case (making the 36 in all) the hernia occurred in a woman. In Krönlein's 23 cases retention was observed in nine, so that in a total of 59 patients an imperfect descent of the testis was recorded in 23, a proportion which must surely indicate some causal relationship. The age of the patients in Breiter's and Krönlein's series varied from 18 to 74 years. That, however, is merely the age at which the hernia was recognised. The history of some of the cases shows that at birth, or very

FIG. 5.

Properitoneal hernia. Ante-vesical form of diverticulum. The orifice is the ostium abdominale; one sac passes down the inguinal canal, and the diverticulum, seen opened, extended "downwards into the pelvis, by the side of the urinary bladder to which it was attached." (St. Bartholomew's Hospital Museum, No. 2118.)

shortly afterwards, a hernia was noticed, and many of the patients had for months or years been accustomed to the wearing of a truss. Most frequently the hernia on examination has been found to be congenital. In 59 cases the sac was congenital in 36; in 13 no mention is made of this point. In 10 only is it definitely asserted that the position of the testis was normal.

ETIOLOGY OF PROPERITONEAL HERNIA.

The fact that but little is accurately known of the precise mode of origin of these forms of bilocular hernia is evidenced by the multitude of theories which have been suggested in explanation. Before recalling them I may mention certain facts with regard to the anatomy of the inguinal canal which are possibly of importance. Eppinger has shown that the inguinal canal may be arbitrarily divided into three portions. The first extends from the anatomical internal abdominal ring to the point where the infundibuliform fascia enters the transversus abdominis. In this portion the interspace between the peritoneum and the fascia transversalis is filled with very loose and lax cellular tissue containing fat. The fascia transversalis is very much more firmly attached to the transversus than it is to the peritoneum. The second section is surrounded by the transverse and the internal oblique muscles, closely embraced by them, and approximately from 10 to 12 millimetres in length. The third extends from the internal oblique to the opening in the external oblique, the external abdominal ring. In this portion the surroundings are again lax and soft, yielding and distensile. In Parts 1 and 3 the adventitious sacs are found. Part 2 is, so far as we know at present, never the seat of a diverticulum from the sac.

The various theories which have been suggested as explaining the development of these forms of hernia may be tabulated, for the sake of clearness, in the following manner. (*a*) The scrotal sac is first developed, the interstitial sac being secondary and arising from the loosening and progressive bulging at the neck of the sac. This may result from: 1. Cicatricial narrowing of the abdominal opening of the sacs (ostium abdominale) whereby the return of the bowel is impeded (Gosselin, Streubel). "Cicatricial narrowing" of the neck of the sac is freely spoken of in the description of cases and operations. I am disposed to doubt whether it ever occurs and I am convinced that if it does occur it is only very rarely. Since the introduction of Bassini's, Halsted's, and other operations necessitating the opening up of the inguinal canal the precise conditions

[1] P. 193 et. seq.

existing at the upper part of the intra-canalicular portion of the sac have been more readily and more closely studied. It may, I think, be said that dense induration in the neck of the sac is never observed. 2. Repeated, indiscriminate, and unrestrained taxis on the part of the patient (Streubel). 3. The wearing of inefficient and ill-fitting trusses which make pressure not upon the whole canal but upon the external ring only (Streubel). 4. Irregularity of the developmental process owing to incomplete descent of the testis (retentio iliaca, retentio inguinalis, retentio pubo-scrotalis) whereby the descent of the gut is barred. Impulses from above continuing the bowel is forced laterally (Streubel, Krönlein). 5. Narrowing of the external ring, while the canal is wide. The bowel readily enough enters the canal but cannot pass the external ring, and therefore insinuates its way between the layers of the abdominal wall (Mosetig v. Moorhof). 6. Through traction of the omentum when adherent to the neck of the sac (Janzer). (*b*) The scrotal sac develops first. Owing to the uncontrolled application of taxis the whole sac is returned between the peritoneum and the fascia transversalis. Later, intra-abdominal pressure or other cause leads to the development of a second hernial sac from the parietal peritoneum in the neighbourhood of the internal abdominal ring (Tessier). (*c*) The properitoneal sac is first developed as a diverticulum from the parietal peritoneum. A secondary bulging of a part of this sac may extend down the inguinal canal into the scrotum (V. Linhart, Baer). (*d*) The scrotal sac and the properitoneal sac are two originally distinct pouches from the parietal peritoneum. The gradual enlargement of either causes its encroachment upon the other until the two sacs eventually unite and open into the abdomen by a single orifice (Baer). In this connexion it is worthy of remark that in an inaugural dissertation written in 1883 Wagner relates a case where an ordinary oblique inguinal hernia was found. On the outer side of the hernia, opening into the peritoneal cavity by a separate orifice, was a properitoneal hernia. (*e*) The hernia results essentially from an outward dislocation of the internal abdominal ring. As a result of this displacement the cord would be insufficient in length to reach the bottom of the scrotum, retention of the testicle would result, and a hernia would be formed in the displaced upper portion of the inguinal process. To account for this dislocation a "faulty insertion of the inguinal band of the primordial kidney on the abdominal wall" is supposed (M. Schmidt). (*f*) The properitoneal sac results from the dilatation of the funicular process between its origin and its entrance into the canal ("first portion" of Eppinger), at which point there is generally a more or less well-defined constriction; the interstitial sac results from the dilatation of that part inside the canal (Ramonède).

It is probable that many causes are at work leading to the development of this variety of hernia. There is no doubt that in certain cases, probably the majority, a congenital defect is at the root of the matter. Many years ago Rokitansky pointed out that in the inguinal region, in the immediate neighbourhood of the internal abdominal ring, small pouches or diverticula were not uncommon. These can occasionally be seen even in the adult or in the aged, but I have seen them at their best in the fœtus. I find that the most effective method of examination is to lay the subject on the face, remove the sacral, lumbar, and lower dorsal vertebræ and all the abdominal contents, and expose in this way the anterior abdominal wall from behind. If this be done a fossa or fossæ can be seen clearly defined in at least 20 per cent. of bodies. Moreover, a fossa can occasionally be found (I have seen two striking examples) along the outer side of the hypogastric artery, which in such cases raises up a well-defined fold of peritoneum, a sort of mesentery. It is at least probable that these pouches offer facilities for the involvement of omentum or bowel in them. In one case Aschoff observed an incarcerated hernia in the pouch by the side of the obliterated hypogastric artery. His figure shows the exact position of the sac very clearly. The following cases, recorded by Baer, seem to me to be of the same class. In one there was "a small direct hernia on the left side which was in continuity with a large pouch between the bladder and the pubes. Both sacs opened into the peritoneal cavity by a common mouth in which bowel had become strangulated. In another case he found a large sac on the right side in the pelvis near the bladder. Its entrance was by a rounded, firm, sharp-edged opening close to the internal inguinal ring. No diverticulum had entered the inguinal or femoral canals. Putting these two cases together Baer concluded that the ante-vesical pouch was first formed and that as it enlarged a portion of its anterior wall was bulged into the inguinal canal" (Macready). In THE LANCET[2] papers, briefly epitomised, by Mr. G. H. Makins and Mr. J. Hutchinson, junr., deal with "Prevesical Hernia." Mr. Makins considered his case to be "an instance of a hernial pouch forming in the middle inguinal fossa between the epigastric and obliterated hypogastric arteries; such pouch opposed in its further development by the resistance of the conjoined tendon being diverted and taking an internal course in front of the bladder in the subperitoneal space." This hernia, which was associated with a reducible right inguinal hernia of the same side, seems to have developed in almost identically the same situation as in Aschoff's case. Mr. Hutchinson's case is not so clear. He "found a ring-shaped opening immediately to the right of the bladder leading into the pouch in which a loop of intestine was strangulated." Mr. Hutchinson pointed out "that in all the recorded cases except one—and there the record was deficient—an ordinary hernia was known to have existed previously. If a hernia was returned *en masse* the peritoneum would be rendered lax and prone to the formation of pouches, but this could not have been the explanation in his case." My friend and colleague Mr. Knaggs has recorded an example of a cruro-properitoneal hernia into a pouch which is probably similar to those mentioned (unfortunately not described with accuracy) by Rokitansky. If in any of these pouches—Aschoff's, Rokitansky's, or another—a hernia develops it may be associated with, and possibly the parent of, the inguinal sac of a properitoneal hernia.

With regard to the origin of these small pouches of Rokitansky it has occurred to me that the explanation given by Lockwood for the origin of the sac of an infantile hernia may be applicable here. As is generally known this author considers that an aberrant attachment of the gubernaculum is responsible for the abnormal descent of the peritoneum forming the sac. If the gubernaculum can cause the descent of a peritoneal tube into the scrotum it seems reasonable to suppose that, acting with less completeness, the mere *pouching* seen in fœtuses might very readily result. The area of peritoneum bearing these pouches is precisely that which is in intimate connexion with the gubernaculum, and this fact is, to say the least, suggestive. There are a few cases in surgical literature illustrating the snaring of omentum or bowel in these fossæ. They are recorded by Brunner, Havage, Englisch, Wagner, and others. It may, then, I consider, be taken for granted that the congenital defect leading to the formation of the pouches described by Rokitansky, and possibly also of the pouches developed by the side of the obliterated hypogastric, is in some degree responsible for the onset of properitoneal hernia. A further congenital defect commonly associated, as I have mentioned, with properitoneal hernia is imperfect descent of the testis. This may be the primary defect and give rise to the development of the accessory sac by acting as a barrier to the further descent of the hernial swelling, or it may be secondary and result from the cause—outward dislocation of the internal ring or another—of the hernia.

The "reduction in mass" of a hernia has been supposed by Tessier and others to be capable of laying the foundation of a properitoneal hernia. Theoretically there is no objection to this suggestion, but practically it lacks sufficient confirmation. I shall presently endeavour to show that it is not unlikely that the condition known as "reduction in mass" is in one of its forms very closely allied to, if not identical with, some forms of properitoneal hernia. The evidence as to the causation of inguino-properitoneal hernia may be thus expressed: (1) the hernia arises most frequently as the result of some congenital abnormality in the inguinal region—as an added factor there may be a loosening congenital in origin (Linhart) of the peritoneum in this region; (2) in some examples a more or less complete "reduction in mass" may be the original and responsible factor; and (3) in a few cases the inner sac may be first fully formed and the inguinal sac is then a secondary diverticulum; or possibly two sacs originally distinct may by gradual enlargement and mutual encroachment blend at or near the ostium abdominale. Cruro-properitoneal hernia may almost or quite without exception be said to be dependent upon the existence of congenital peritoneal pouches. The case recorded

[2] THE LANCET, April 15th, 1899, p. 10

by Mr. Knaggs to which I have already referred is a most admirable example of this.

ETIOLOGY OF INTERSTITIAL HERNIA.

Much that has been said of properitoneal hernia applies with equal weight to interstitial hernia. The pouches of Rokitansky and of Aschoff cannot, of course, stand in any causal relationship. The portion of the funicular process from which the diverticular sac is formed is either the "third portion" of Eppinger or the portion immediately outside the external oblique. The anomalies of the testis are noticed with even greater frequency in interstitial than in properitoneal hernia. Of 129 cases tabulated by Macready in 73·4 per cent. there was some abnormality of the testis and in 67·1 per cent. the testis was either completely retained or had only partially descended. In 28 cases the testis could not be found at all. This form of hernia is, however, of decidedly greater relative frequency in females than in males. Macready gives the percentage as 0·13 per cent. for males and 0·61 per cent. for females. The same preponderance of cases on the right side is also noticeable.

The most satisfactory explanation of the development of interstitial hernia is, I venture to think, founded upon the connexion of the hernia with retained testis. The testis bars the way to a further descent of the hernia and the inguinal portion of the sac bulges out in the direction of least resistance. This explanation is strengthened by the observation, which is almost universal, that the scrotum is hardly ever fully occupied by a sac containing bowel or omentum. As a general rule the lowest point reached by the descending hernia is at or just outside the external abdominal ring. An exquisite example of this is found in the Guy's Hospital Museum, No. 1120. The bulging sac behind the barrier-like testis held "nearly a foot of ileum." In 129 cases observed between 1866 and 1890 at the Truss Society in nine only was the scrotum occupied by the hernial swelling. If the testis has not passed clear of the external ring the scrotum is ill-developed, but "a flat band of tissue, the remains of the gubernaculum, can generally be traced passing from the canal over the crest and body of the pubes" (Macready). In some cases, however, the testis is normal in position and the explanation just given is therefore inapplicable to them and to the cases occurring in women. There is one explanation, however, which, although I do not think it adequately accounts for these cases, is still deserving of recognition. In the earlier records there is occasional mention of the "thinness" of the abdominal wall in the inguinal region, of "obliteration of the layers," and so forth, but, so far as I am aware, it is to Macready that we owe the assertion of the importance of this condition. He has shown that "the wasting or congenital defect of the muscles is chiefly noticeable below a horizontal line through the anterior superior iliac spine. It concerns sometimes the external oblique as well as the deeper muscles. In a greater or less degree it seems to be a constant feature in the interstitial hernia now under consideration." I cannot do better than quote the following passage from Macready's "Treatise on Ruptures": "If we seek for the principal difference between interstitial and those herniæ with anomalies of the testis we find it in the condition of the parietes. I have drawn attention to the delicate membranous state of the abdominal walls about the inguinal region. Here is a difference between interstitial and other herniæ which is common and which is real. If the imperfection of the abdominal wall, so often noticed with these herniæ as existing in greater or less degree, is their original cause, it does not militate against the supposition that a large proportion are attended with anomaly of the testis. On the contrary, when that organ is defective it is very probable that the parts through which it passes and with which it is so intimately related will be likewise deficient, more especially as the anomaly of the testis in these cases is generally of a high grade." It must, however, not be forgotten that this muscular atrophy and thinning may in some cases be the result rather than the cause of the hernial formation. The weight of a large hernial mass constantly pressing unduly on the muscular wall may lead to its wasting or disappearance. Macready does not bring forward any arguments in support of his views which seem to me convincing. I should certainly be disposed to consider the wasting of the muscles which undoubtedly exists rather as an effect than as a cause of the hernia.

In that class of case where the neural sac lies between the external and internal oblique, if the external muscle be firm and the internal and transverse be thin and atrophied the resistance met with at the external ring would cause a bulging beneath the aponeurosis of the external oblique. The condition in which the sac lies upon the external oblique may be caused by a testis retained immediately outside the canal, or possibly by the misapplied pressure of a truss, apart altogether from any irregularity, congenital or otherwise, in the muscular layers. The records of the cases show that in almost all of them the internal and external rings are opposite one another, forming practically one large opening. The sac can readily enough leave the canal therefore. The obstruction to its downward tendency must then arise external to the ring in one or other of the ways suggested. A study of the peritoneal conditions existing in properitoneal hernia suggests a close relationship between this form of hernia and the condition described as "bilocular hydrocele" (Fig. 6). If we suppose that the

FIG. 6.

Bilocular hernial sac. "Two thin membranous sacs, communicating with each other and having a common opening at what appears to be the internal abdominal ring. The sac contained a hernia and a quart of 'ascitic' effusion." The identity of this condition with bilocular hydrocele is at once apparent. (Guy's Hospital Museum, No. 1159.)

ostium abdominale becomes closed (by the normal process of "physiological agglutination") and that fluid collects in the inguinal and properitoneal sacs we should have then a hydrocele of the tunica vaginalis communicating with a serous cavity lying in the abdomen between the peritoneum and the fascia transversalis. That is precisely the condition found in bilocular hydrocele. A reference to the recent case reported by Felix von Winiwarter shows that the conditions found in the removal of the sac of this form of hydrocele are the same as in properitoneal hernia save that in the former the mouth of the sac (ostium abdominale) has closed and fluid has collected in the serous cavity and in the latter the mouth has remained open and a hernial descent has occurred.

SYMPTOMS AND SIGNS: PROPERITONEAL HERNIA, INGUINAL.

With the rarest exceptions cases of properitoneal hernia are first seen when symptoms of acute or sub-acute strangulation are present. A patient who for years has had a hernia for which, perhaps, a truss has been worn begins acutely to suffer from symptoms of obstruction. The hernia may be found on examination by the surgeon, taxis may be applied, and the hernia with little difficulty reduced. Symptoms of strangulation persist and steadily increase and operation is resorted to, or the patient dies and the condition is revealed. In some cases—a minority certainly—some swelling may be noticed after the reduction of the hernia; a "sausage-shaped swelling reaching the anterior superior

spine" has been more than once recorded. But in most cases no swelling is seen and an examination of the specimens in the London museums explains that. As I have already described, the properitoneal sac may pass outwards, backwards, or inwards and downwards. If outwards a swelling or an indefinite though appreciable tumefaction may be caused; if backwards there will be probably no swelling; and if inwards and downwards there will certainly be none. Krönlein figures one case in which the tumour on the outer side of the canal is well shown. Since this author drew special attention to this point more accurate examination has revealed a tumour in the majority of cases. Thus, in Breiter's 36 cases a "tumour or tumefaction" was present in 22. In only eight of the cases is it definitely asserted that careful, purposeful examination revealed no bulging. Judging from museum specimens I should decidedly say that in the great majority no swelling could have been revealed during life. The cases where swelling is absent are less likely to be correctly diagnosed; the result, therefore, is that such cases are more likely to die and the specimen reach the museum. Breiter's proportion of 22 out of 36 is therefore very considerably in excess of the truth.

Strangulation of the contained omentum or bowel may occur in one of three places: (1) at the ostium abdominale, the common orifice of the two sacs into the peritoneal cavity; (2) at the neck of the properitoneal sac; and (3) at the neck of the inguinal sac. If at 1 the bowel or omentum may be "reduced" from one sac to the other, remaining strangled at the ostium abdominale; if at 2 there may be no signs and symptoms but those of acute obstruction, and attention may never be specially called to the inguinal region; and if at 3 the case clinically is a strangulated bubonocele or scrotal or femoral hernia. In some few cases, according to Breiter, it has been observed that when two sacs are clearly present reduction of the hernial contents from the outer one causes an immediate and concomitant bulging of the inner sac, and *vice versâ*. The symptoms of strangulation are, one gathers from the record of the case, neither so sudden in onset nor so swift in their increase as in the ordinary strangulated hernia. As a result operation has frequently not been resorted to till the sixth, eighth, or tenth day. In some of the records I have noticed that "vermicular contraction" of the intestine, "coiling," and "hypertrophy" are mentioned. This would seem to indicate that some obstruction has been of long duration. The sudden stoppage of the intestine by any cause, internal strangulation, or strangulation in a hernial sac never, in my experience, causes any such condition of hypertrophy as is here referred to. A hypertrophied intestine, the contraction of which can be seen through the abdominal wall, giving rise to "coiling" and "vermicular contraction," must inevitably be the result of long-standing and either intermittent or incomplete obstruction. In properitoneal hernia the ostium may be the cause of the partial or temporary obstruction. Almost all the museum specimens that I have examined are to be found, not under the heading of "properitoneal hernia," but under "reduction in mass." The symptoms, therefore, are in a large number of cases those of the latter condition. To this point I shall refer again. So far as the contents of the sacs are concerned there is little to remark. In three-fourths of the cases small intestine alone is present; the omentum, large intestine, and in one case the cæcum have all been noticed. Three of the cases are said to have been examples of what is commonly, though unreasonably, termed "Richter's hernia." Cruro-properitoneal hernia is much rarer than the former. Breiter records only nine cases, four on the left side, three on the right, and two undetermined. The average age of the patients is higher by several years than that of the inguinal variety. The external swelling is invariably small and the obstruction has always been furnished by the ostium abdominale.

DIAGNOSIS.

As can readily be understood the diagnosis of properitoneal hernia before operation is sometimes a matter of difficulty or is even impossible. In cases where a swelling, bulging, or tumefaction is noticed the diagnosis can be and has been accurately made. Such cases should offer no difficulty to a careful observer. The frequency of the association of testicular anomalies should make the surgeon prompt to investigate the precise nature of any hernial swelling where the testis is not in its normal position, especially on the right side. If, however, there is no inguinal swelling the symptoms are those of "reduction in mass," of acute obstruction, not, as a rule, of the most violent type.

SYMPTOMS AND DIAGNOSIS OF INTERSTITIAL HERNIA.

In interstitial hernia the mural sac is always capable of being recognised. At one time or another the sac can be seen distended with the usual hernial contents and no difficulty can be experienced in the recognition. The symptoms are generally inconspicuous and strangulation is infrequent.

TREATMENT.

Only one treatment can possibly deal effectively with properitoneal and interstitial hernia—operation. The wearing of a truss is useless and in most cases must also be a source of positive harm. The whole of both sacs should be excised, an undertaking which will involve a certain amount of division or separation of muscular and tendinous fibres. The "radical cure" can be afterwards carried out by any of the methods suited to the occasion. In some cases the removal of the testis is desirable. If it is retained in or immediately external to the canal it will suffer from the pressure of a truss if one has subsequently to be worn. A retained testis is, moreover, a source of some danger in any case. It is liable to suffer from inflammatory conditions or malignant disease; and as its usefulness is doubtful there can be no valid reason for allowing it to remain. In order to get at the second sac without a further incision than is needed for all herniotomies Baron suggests that when the outer sac is stripped to its neck a vigorous traction should be applied. The result will be that the ostium abdominale will be brought into view, any strangulation there can be relieved, and the bowel returned; subsequent removal of the inner sac if small is then possible.

In certain recorded examples of inguino-properitoneal hernia the neck of the sacs has been so high up that to reach it a formidable incision in the abdominal wall would have been needed. Operating under such conditions, Trendelenburg, Ward, and Lawson Tait have suggested and adopted the median abdominal incision—have, in fact, dealt with the case as one of intestinal obstruction. This procedure is certainly much simpler, probably very much safer, and, if recovery follows, less mutilating and disabling, than the older method of "hernio-laparotomy."

PROGNOSIS.

The prognosis is always serious in cases where symptoms of acute or sub-acute strangulation are present. There are the usual dangers of strangulated hernia, and in addition the danger accruing from insufficient evidence upon which to found an accurate diagnosis. There may be a quite gradual development of the symptoms of strangulation and operation is in consequence delayed in many cases. Moreover, the apparent reduction, reduction in mass, is misleading. There are not sufficient cases in recent years to make any statistics that may be compiled of the least value. The prognosis may perhaps be most aptly expressed by saying that the risks are slightly but appreciably greater than those of strangulated hernia.

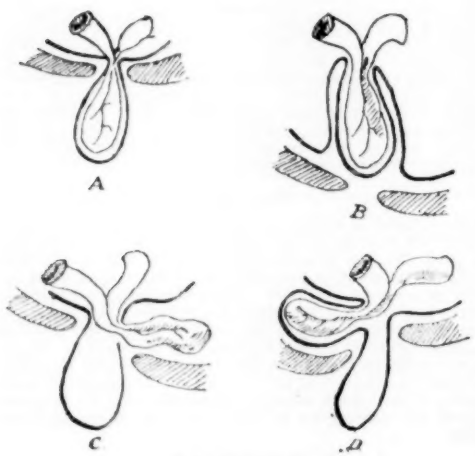
REDUCTION IN MASS.

I have already remarked that my observations have led me to conclude that many cases of "reduction in mass" are in reality cases of properitoneal hernia. "Reduction in mass" has been described as being the result either of a complete return of the hernia, sac and contents, undisturbed so far as their mutual relations are concerned, within the abdomen, but outside the peritoneum; or of a rupture at the neck of the sac by which the hernial contents escape from the sac into the lax subperitoneal tissue still strangled at the neck. I once operated upon a man suffering from strangulated inguinal hernia whom I believed to have suffered from a reduction in mass. On cutting down to the sac I found it quite flaccid and loose and I discovered a rupture in the sac near the neck through which all the fluid of the sac had escaped, leaving the bowel a mere knuckle lying undisturbed within the sac. I find that Birkett describes three similar cases; Streubel refers to three and Maydl has observed two. If the hernia be small and the patient stout the dispersion of the fluid will give an appearance of reduction whether the fluid has escaped subcutaneously or into the subperitoneal tissue. A rupture of a vaginal hydrocele under pressure applied too vigorously by the patient has been not infrequently recorded.

In searching the museums of London for examples of properitoneal hernia I was at once struck by the fact that the great majority of the specimens were described as "reduction in mass." Thus, in Guy's Hospital Museum specimens 1134, 1135, and 1143, and in St. Bartholomew's Hospital Museum specimens 2117 and 2118, are so labeled. Specimen 2118 (St. Bartholomew's) is a remarkable example of the inward and downward projecting pouch which reaches the bladder. A careful examination of each of these specimens shows indubitably that there is no rupture at the neck of the sacs, but that the bowel, strangled at the ostium abdominale, has passed from an inguinal sac to the properitoneal one, the serous lining of which is quite clearly recognisable. A similar example in a case of cruro-peritoneal hernia is shown in Specimen 1143 of Guy's Hospital Museum. The impression gathered from museum specimens alone is that the very great majority of examples of "reduction in mass" are in reality no other than cases of properitoneal hernia in which the bowel has been reduced from the one sac to the other. An attempt to gauge the relative frequency of these conditions based upon museum preparations alone is necessarily unsatisfactory. Only the severer cases are there represented. Cases successfully dealt with by operation may be recorded by the surgeon, but his account, however precise, reveals a lack of that intimate acquaintance with the circumstances which a careful dissection is alone capable of giving.

Reduction in mass may therefore be described as of the following varieties. 1. Reduction into a sac lying between the peritoneum and the transversalis fascia (Fig. 7, D). This

FIG. 7.



Reduction in mass.

sac has probably received the bowel on many previous occasions. It exists in both the inguinal and femoral regions, forming the special class of hernia known as properitoneal or bilocular. This sac may pass (*a*) inwards to the bladder, (*b*) backwards to the iliac fossa, or (*c*) outwards towards the anterior superior spine. This form is probably by far the most frequent. In a very few cases, not five in all, the apparent reduction has occurred into one of the interstitial sacs beneath or superficial to the external oblique. Such a case was that under the care of Mr. Cock (Guy's Hospital Museum, No. 1120). 2. Reduction of the whole sac within the abdomen but outside of the peritoneum, the relations of sac and contents to one another being unaltered and strangulation at the neck still persisting. (Fig. 7, B.) It is probable that the loosening of the sac is of long duration and is the result of vigorous and ill-regulated taxis. This variety is rare. It was first described by Saviard, afterwards by Le Dran, Lafaye, and Richter. 3. Rupture of the neck of the sac and escape of the contents of the sac through the rupture into a cellular space outside of the peritoneum (Fig. 7, C). The rupture generally occurs at the back of the sac just below the neck. This form of reduction has been well described by Birkett. If fluid alone escapes while the bowel remains an illusory appearance of reduction will be presented. It might be worth while to emphasise this condition as "false reduction in mass," for clinically the two conditions of "false" and "true" reduction may be precisely similar. If in "false" reduction the rupture is at the distal extremity of the sac and the discharge of fluid subcutaneous it is impossible, of course, for bowel to escape. As a variety of this form may be mentioned the passage of the strangled intestine through a cut made near the neck of the sac when a hernia knife had been introduced to divide the "stricture at the neck of the sac." Maydl has observed this accident. After the supposed division of the strangled band pressure is applied to the bowel and reduction apparently occurs. The neck of the sac is, however, untouched and the strangulation consequently persists. A very beautiful example of this kind is recorded by Farabœuf. This form also is rare.

A fourth form of "reduction in mass" is described and figured by Roser and mentioned by Pick. It consists in the reduction "into the inguinal canal" of the bowel that has formerly occupied the scrotum. A wide dilatation of the canal is considered as permitting this partial reposition. I have not been able to discover a museum specimen of such a condition, nor have I found any unequivocal case in the literature of this subject, though mention of the condition is made by several of the earlier writers on hernia. Chelius considered that in herniæ of moderate or large size when reduction was apparently complete a small segment of gut, thick with inflammatory products and paretic, might lie inert in the canal and undergo a later, secondary strangulation. Reduction of the strangulated contents of a hernial sac into a second underlying sac in the scrotum have been recorded by Armand, Horn, Sandyfort, and Scarpa. It is possible that these second sacs are pulled down into the scrotum by gubernacular bands, in the same manner as the sac of an infantile hernia. Demmeaux has suggested that whether the sac first present in the scrotum be congenital or acquired the press of intestine on a weak and loosely supported neck may cause a diverticulum slowly to develop. Such pouch may be in front or behind, to the inner or outer side. If rupture of the neck of a femoral sac occurs the bowel may pass into the subperitoneal tissue. Callisen recorded in 1777 a case where, owing to rupture of the sac below the neck the bowel had escaped and made for itself a lodgment between the pectineus and psoas muscles. These conditions may be represented in tabular form thus:—

True reduction in mass.—1. Reduction into a properitoneal sac; rarely an interstitial sac. 2. Reduction of the whole sac with contents within the abdomen outside of the peritoneum, the mutual relations of sac and contents being undisturbed. 3. Rupture of the neck of the sac or its division during operation and extravasation of the hernial contents into the subperitoneal tissue.

False reduction in mass.—1. Rupture of the sac at the neck or elsewhere with escape of fluid only. The hernial swelling becomes considerably smaller, but the bowel remains strangled. 2. Reduction of part of the hernial contents. A small portion remaining in the canal, paralysed and stiff with inflammatory products, undergoes a "secondary" strangulation.

LECTURE II.

Delivered on Feb. 21st.

ENCYSTED HERNIA.

MR. VICE-PRESIDENT AND GENTLEMEN,—The term "encysted hernia" is one which for well nigh a century has been the subject of abuse. There has long been, and there still continues to be, much difference of opinion as to the most apt and appropriate names for some of the less common forms of hernia. The term "infantile," introduced in the year 1803 by the first William Hey of Leeds for a certain condition of hernia which it in no sense accurately described, has recently been appropriated by Lockwood for that variety of hernia in which a separate peritoneal pouch is dragged down into the scrotum probably by an aberrant attachment of the gubernaculum. The majority of surgeons who have written since Lockwood's admirable work was published have accepted, unhesitatingly and with complete accord, his description of that hernia and his restrictive adoption of the term "infantile" for it. I propose to retain the term "encysted," which is strikingly appropriate for that variety of hernia which Hey described

and figured and which Cooper subsequently verified. I would define encysted hernia, therefore, as that form of hernia in which the sac, with its contents, wholly covered on the outer side by a reflected layer of serous membrane, hangs downwards from the internal ring in the cavity of the processus vaginalis. The portion of the processus vaginalis containing the hernia may be the whole as far upward as the internal abdominal ring, or may be only the upper portion, that lying in the inguinal canal along the cord, the lower portion, tunica vaginalis, having in this case been shut off by the ordinary fusion process occurring at the upper end of the testicle. This form of hernia, from some misconception which I do not understand, has not received adequate recognition from the later English authorities. Macready in his work on "Ruptures," mentions encysted hernia only in a footnote, which is very brief, but is at least of sufficient length to show that he does not appreciate this variety. Lockwood who has contributed by far the best work on hernia of any English authority of recent years, in defining and describing "infantile" hernia, had overstepped, as I think, the very definite boundary between infantile and encysted herniæ and has made an attempt to include some of the latter among examples of the former. Birkett in his article in Holmes's System gives a good account, based upon Forster's observations, of one form of this hernia. Other authorities either ignore the subject or quote without question the work of one or other of the writers whom I have named.

HISTORY.

The first case of this kind is probably that which occurred to Mèry at the Hotel Dieu in 1701. Forster's case, recorded in Sir A. Cooper's work, is described as follows: "A shoemaker, aged 31 years, who died of strangulated hernia; on dissection the following were the appearances. When the scrotum was divided the tumour was brought in view, taking the course of the spermatic cord, evidently involved with it, and much contracted at the ring. On investigating further and cutting carefully through the tunica vaginalis of the cord near the ring a fluid escaped. I then continued the incision to the bottom of the scrotum, through the tunica vaginalis of the cord, and the tunica vaginalis testis, which I now found to be one cavity, the edges of which being turned back on either side exposed a hernial sac pendent from the ring and descending towards the testicle. From hence it evidently appeared that the hernial sac and its contents were contained in the tunica vaginalis of the spermatic cord, which formed only one cavity up to the ring. On opening the hernial sac it was found to contain a portion of small intestine of a claret colour and in a mortified state." At Hey's request the specimen from this case was examined by Sir A. Cooper and Mr. J. Pearson, and the following was their report:—

"In consequence of Mr. Hey having expressed a wish that the encysted hernia of the tunica vaginalis taken from a patient of Mr. Forster's in Guy's Hospital and preserved in the museum of St. Thomas's Hospital should be carefully examined,

"We, the undersigned, have inspected the preparation above-mentioned with much care, and the result of our inquiry is:—

"1. That the bag in which the intestine is incarcerated hangs within the tunica vaginalis testis, and reaches nearly to the superior edge of the epididymis.

"2. The only connexion which this bag has with the tunica vaginalis is at its orifice, at which part it adheres firmly to the tunica vaginalis.

"3. From this adhering portion the bag hangs like a pear depending from its stalk within the tunica vaginalis.

"4. The tunica vaginalis forms a smooth unbroken surface as usual. "&c., Signed,

"ASTLEY COOPER,
"JOHN PEARSON."

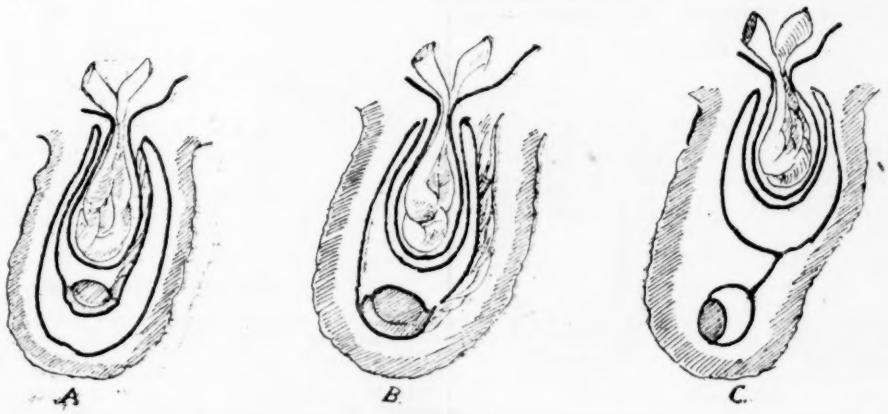
Dupuytren and Aston Key also wrote of this hernia, but little or no advance was subsequently made until the appearance in 1865 of an important monograph by Bourguet of Aix. Other writers have added one or more cases occurring under their observation. Among these are Berger, Monod, and Terillon, Montazm, D'Arcy Power, Heaton, and Selcke. There can, I take it, be little doubt that there has been considerable confusion in the description of cases as being "encysted." Many cases of hernia in association with hydrocele of the tunica vaginalis have been included under a misapprehension as to the authentic meaning of the term "encysted." Cases of hernia with a cystic condition of the wall of the sac possibly due to the organ of Giraldès and cases in which adhesions and fluid are present in the sac have been similarly misunderstood. Until Lockwood carefully defined and restricted the term "infantile," many ruptures of this form were certainly looked upon as "encysted," and to some extent the error still persists.

DESCRIPTION OF THE VARIOUS FORMS OF "ENCYSTED HERNIA."

I propose to describe three forms of encysted hernia: (1) encysted hernia of the tunica vaginalis, the testis lying at the bottom of the cavity (Fig. 8 B); (2) encysted hernia of the tunica vaginalis, the testis lying at the lower end, and "apex" of the encysted mass (Fig. 8 A); and (3) encysted hernia of the funicular process (Fig. 8 C).

1. *Encysted hernia of the tunica vaginalis, the testis lying at the bottom of the sac.*—In this case the conditions presented on examination of the sac and tunica vaginalis are as follows:—On opening what appears to be the sac a little fluid as a rule escapes. On enlarging the incision it is seen that the sac has not been opened, but instead a serous cavity at the bottom of which lies the testis. This is the tunica vaginalis. Pendent from the neck of the tunica vaginalis, which extends almost or quite up to the internal abdominal ring, is a thick, rounded elongated mass, covered on the outer side by a reflexion of the tunica vaginalis, which is the hernial sac,

FIG. 8.

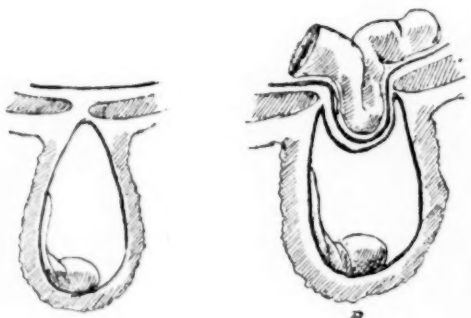


Encysted hernia.

containing the intestine, omentum, or other viscera. This pendent mass has been quite aptly compared by Bourguet to the "teat of a cow." In order to reach the hernial contents, therefore, from any point three layers of peritoneum will have to be divided, (*a*) the outer layer of the tunica vaginalis; (*b*) the inner, reflected layer of the tunica vaginalis; and (*c*) the sac. Between (*b*) and (*c*) there is some loose cellular tissue which is torn through with comparative ease. On passing the finger in through the original incision in the tunica vaginalis and attempting to enter the abdomen through the inguinal canal one is met everywhere by the reflexion of the outer on to the inner layer of the tunica vaginalis. Examples of this form of hernia, occurring in women, have been recorded by Berger and Reclus

The explanations which have been offered to account for the genesis of this condition are legion. They may be briefly epitomised thus: (*a*) Sir A. Cooper after describing Forster's case remarks: "The idea which I have formed of the nature of this case is that the tunica vaginalis, after the descent of the testis, became closed opposite the abdominal ring, but remained open above and below it. That the intestine descended into the upper part and elongated both the adhesion and the tunica vaginalis so as to form it into a bag which descended into the tunica vaginalis below the adhesion and becoming narrow at its neck though wide at its fundus, it received a portion of intestine which was too large either to be returned into the abdomen or to retain its functions while it continued in the sac." The disadvantages of this theory have been pointed out by many subsequent writers. There is never, so far as we know, any evidence in the closure of the funicular process of the formation of a "septum." The process of closure is similar in all its details to that which in the peritoneal cavity of the embryo is normal in certain points, the process of "physiological fusion." Notwithstanding this fact Berger has, on wholly insufficient evidence, accepted this explanation as elucidating the conditions in a case recently observed by him. (*b*) Dupuytren considered that the formation of a large congenital hydrocele was an essential preliminary. Subsequently to this a hernia developed and lay posterior to the hydrocele sac. Then owing to mutual encroachment the hernial sac became embedded in and surrounded by the hydrocele until in the final event the "encysting" resulted. (*c*) Jaboulay offered an ingenious but, as I believe, incorrect theory to account for the condition. He suggests that the funicular process consists of three parts—a scrotal, an inguinal lying in the canal, and an internal (very short) joining the latter to the parietal peritoneum—which may be likened to the three tubes of a telescope. By the "shutting up" of these tubes the conditions present in encysted hernia are reproduced. This explanation is rendered clearer by a reference to the figures which he gives. (*d*) The explanation which appears to me to be the most satisfactory was, I recently learnt, first suggested by Bourguet in his original work. According to this theory the closure of the funicular process has only occurred at one spot at or near the internal abdominal ring (Fig. 9). From here to the bottom of the scrotum the peritoneal tube remains open. A hernial sac now forms in the usual manner from the parietal peritoneum, at the internal abdominal ring, originated possibly by a small dimple of the upper part of the funicular process above the sole point of closure. This hernial sac as it gradually insinuates its way through the canal and into the scrotum pushes before it the peritoneum of the unclosed funicular process, and invaginates its upper end. The "fusion" point of the funicular process will then form the tip of the advancing hernial mass, which is therefore from its earliest beginnings "encysted." In three cases of this kind recorded by Dupuytren, Bourguet, and Berger, a rupture has occurred at the "apex" of the sac and the bowel, escaping into the tunica vaginalis, has been strangled at the point of rupture. Barret de Navaris has recorded an example of hernia encysted in a hæmatocele of the tunica vaginalis.

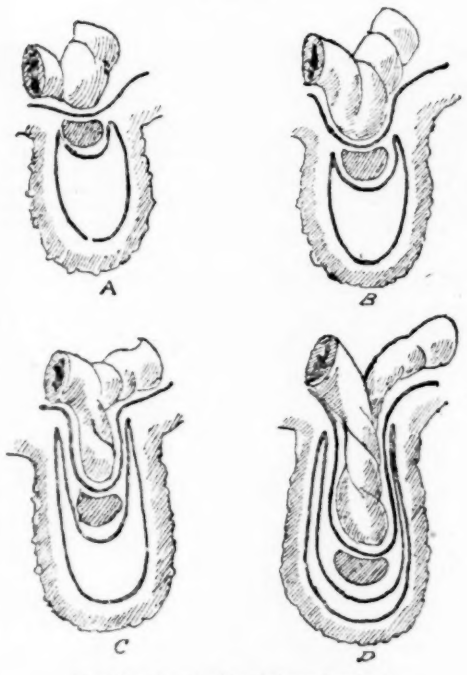
FIG. 9.



Formation of encysted hernia (first variety).

2. *Encysted hernia of the tunica vaginalis, the testis lying at the lower end, the "apex" of the encysted mass.*—The conditions found on examination of this class of hernia are precisely the same as those in the last class, with the exception that the testis, instead of lying on the floor of the tunica vaginalis, lies on the apex of the encysted tumour at the orifice, so to speak, of the "teat." The elements of the cord and the testis lie between the sac and the reflected layer of the tunica vaginalis. An essential preliminary to this form of hernia is the retention of the testis (Fig. 10).

FIG. 10.



Formation of encysted hernia (second variety).

This has been observed and carefully noted in some of the cases. In Heaton's case and in my own the testis had never to the patient's knowledge appeared at the external ring. The condition antecedent to the onset of the hernia will be this. The testis will be retained just outside the peritoneal cavity. The upper part of the funicular process is closed in the usual manner, so that above the testis is the peritoneal cavity completely shut off, and below it, and reaching up to it, the lower unclosed part of the funicular process. A protrusion of parietal peritoneum from the internal abdominal ring abuts immediately upon the testis, and in the further hernial descent the protrusion is headed by that organ. But as the testis proceeds it at once meets the tunica vaginalis; this it dimples and pushes in upon itself, and in the last stage the similar serous reduplication is produced as in the former

case. So far as I am aware this form of hernia, although described, has never been explained. The explanation which I suggest seems reasonable and in consonance with all the facts.

3. *Encysted hernia of the funicular process.*—In this form of hernia the sac is formed in the same way as in the first variety, but the closure of the funicular process has been more extensive. The normal fusion at the upper end of the tunica vaginalis has resulted in the natural formation of that serous cavity. The funicular process above that point of fusion has remained open and it is into this potential "hydrocele of the cord" that the hernial sac descends and becomes encysted. A very good example of this form is recorded and figured by Selcke. In one recorded case where the condition was in an early stage of its development there were two small hydroceles of the cord between the sac and the tunica vaginalis. As a general rule it has been specially noted by the recorders of the few genuine cases that hydrocele fluid of greater or less amount has been present in the enveloping serous sac, but this fluid is merely a chance product. It stands in no causal relation to the hernial development.

SYMPTOMS.

There is no symptom, there are no signs, by which we can before operation recognise the presence of an encysted hernia. On the contrary, when any diagnosis other than that of a normal oblique inguinal hernia has been made it has indicated only the existence of fluid in connexion with the sac. In not a few cases this has been observed and a diagnosis of "hernia with hydrocele" has been accepted.

TREATMENT.

There is no need for any further remark than this, that in removing the tunica vaginalis, or part of it, and the hernial sac care must be exercised in dealing with the cord, otherwise the spermatic vessels or the vas deferens may be unduly interfered with. The whole of the tunica vaginalis, so far as possible, must be removed. It is not necessary to fashion a new and smaller serous cavity for the testicle. When this procedure has been carried out it has led to the occurrence of hydrocele.

The Erasmus Wilson Lectures

ON

THE ANATOMY AND PATHOLOGY OF THE EYE.

Delivered at the Royal College of Surgeons of England on Feb. 12th, 14th, and 16th, 1900,

BY E. TREACHER COLLINS, F.R.C.S. ENG.,
ASSISTANT SURGEON TO THE ROYAL LONDON OPHTHALMIC HOSPITAL.

LECTURE III.[1]

Delivered on Feb. 16th.

ELASTIC TISSUE OF THE HUMAN SCLEROTIC.

MR. VICE-PRESIDENT AND GENTLEMEN,—The human sclerotic, consisting chiefly of white fibrous tissue, contains also a number of delicate yellow elastic fibres. The distribution of these is well shown in sections stained with acid orcein by which they are picked out a bright red. They may be seen cut transversely when they appear as little dots, and longitudinally when for the most part they run parallel with the bundles of white fibrous tissue and have a wavy course. The outer layers of the sclerotic contain more elastic fibres than the inner, and they are more numerous posteriorly than anteriorly. Around the entrance of the optic nerve there is quite a dense plexus of them. The lamina cribrosa is largely composed of elastic fibres which extend across the nerve fibres from the plexus in the sclerotic on each side. From the lamina cribrosa a delicate network of elastic fibres extends backwards around the central blood-vessels of the optic nerve. In both the pial and the dural sheaths of the optic nerve there are numerous elastic fibres. In the former they are like those in the sclerotic, fine and delicate, but they run a more tortuous course. In the dural sheath the elastic fibres are thicker than are those in the sclerotic, but they have the same wavy character, and they run parallel to the bundles of white fibrous tissue. In the tendons of the recti muscles, where they are inserted into the sclerotic, thick elastic fibres are deeply stained by the acid orcein; they are especially numerous in the sheath around the muscles. This arrangement of the elastic fibres in the sclerotic which I have described corresponds very closely to that which was demonstrated by Professor Salter at the twenty-fifth Ophthalmological Congress at Heidelberg in 1896, who employed what he terms Spaltenholz's method of staining which he says shows up the elastic fibres black against a yellow background.

STRUCTURE OF THE SCLEROTIC IN DIFFERENT ANIMALS.

The structure of the sclerotic presents several variations in the different species of the animal kingdom. In elasmobranch fish it consists of hyaline cartilage from the sclero-corneal margin right back to the optic nerve with only a small amount of fibrous tissue on its outer surface. In most teleostean fish there is hyaline cartilage anteriorly extending up to the margin of the cornea, but posteriorly there is only fibrous tissue, or fibrous tissue with scattered patches of cartilage in it. In birds and in some reptiles there is a cup of hyaline cartilage posteriorly extending forwards beyond the level of the ora serrata and anterior to it are plates of bone. In other reptiles the sclerotic is fibrous throughout. In all mammals, with the exception of the ornithorrhynchus and the echidna, the sclerotic is entirely fibrous. In the two exceptional mammals it contains a cup-shaped piece of hyaline cartilage at the posterior part extending forwards as far as the ora serrata and having fibrous tissue on its inner and outer surfaces.

HYALINE CARTILAGE IN THE SCLEROTIC OF CONGENITALLY MALFORMED HUMAN EYES.

In some congenitally microphthalmic human eyes which have presented several malformations and had cystic protrusions connected with them pieces of hyaline cartilage have been found in the fibrous tissue of the sclerotic. I have met with one such case myself. The eye was removed from a child aged 14 weeks, and was noted to have been defective since birth. The cornea and the whole globe were exceedingly small. Attached to its lower part in front of the optic nerve was a thin-walled lobulated cyst lined with retinal tissue. At the upper part of the globe, lying in front of a large portion of the cornea, partly embedded in it and partly in the sclerotic, was a broad plate of hyaline cartilage which ended anteriorly in a rounded extremity amongst the fibrous tissues beneath the epithelium of the conjunctiva. Posteriorly it also ended in a rounded extremity surrounded by fibrous tissue and projected as a sort of spur from the sclerotic about the equator of the globe, there being fatty tissue in the recess left between the spur and the sclerotic. There was a second piece of hyaline cartilage in the sclerotic on the opposite side of the globe which commenced posteriorly in a rounded extremity a short distance from the optic nerve and the anterior termination of which was not shown in my sections. In some sections this last piece of cartilage was seen as a circular patch lying in the fibrous tissue between the eyeball and the cyst.

Mitvalski,[2] in the description of a somewhat similar microphthalmic eye with a cystic protrusion, says: "Where the scleral tissue passes over into the fibrous wall of the sac there is on each side in the entire length of the ball a mass of cartilage." Dr. Lapersonne[3] also mentions and figures a piece of hyaline cartilage embedded in fibrous tissue lying between a microphthalmic eyeball and a cystic formation connected with it.

VARIOUS FORMS OF CYSTOID AND BULGING SCARS MET WITH AFTER OPERATIONS.

The peculiar bulging translucent form of scar which is met with sometimes after operations on the eye, most frequently after iridectomy for glaucoma, was first described by von Graefe and termed by him "cystoid cicatrix." I have previously demonstrated how microscopical examination of such cicatrices shows them to consist of a gap in the sclero-corneal tissue covered by conjunctiva and lined by a piece of atrophied iris. That these cystoid cicatrices are

[1] Lectures I. and II. were published in THE LANCET of Feb. 17th, 1900.

[2] Archives of Ophthalmology, vol. xxii., p. 355.

[3] Archives d'Ophtalmologie, tome xi., p. 207.

produced by the prolapse of a fold of iris does not, from their clinical appearances alone, appear obvious and has been doubted. Pathological examination of a large number of cicatrices has, however, convinced me that for a permanent fistula to become established in the fibrous tissue tunic of the globe it is necessary that the two edges of the wound should become lined by cells of an epithelial character, otherwise plastic exudation is sure to be thrown out and to lead to their union. When a fold of iris becomes incarcerated this epithelial lining is supplied by the pigment epithelium on its posterior surface. I have found in some cases the lining also in part furnished by the most anterior of the ciliary processes and a turning forward of one of the divided ends of Descemet's membrane with its endothelial cells. I have had recently to examine a glaucomatous eye in which a short time previously to excision the operation for incision of the iritic angle, in the way suggested by Valude, had been performed. It is interesting in two ways. First, it shows how difficult it is to know when the point of the knife is passed into the iritic angle, for though the operator, a most experienced ophthalmic surgeon, aimed at the angle of the chamber, sections of the eye show that the sclero-corneal tissue some distance inside of it was incised. Secondly, it shows that a wound in the sclero-corneal tissue at the periphery of the anterior chamber in a glaucomatous eye will, unless it has an epithelial lining, soon heal up, and not remain as a permanent fistula. In this eye the aqueous humour escaped beneath the conjunctiva at the time of the operation, but in the specimen the outer layers of the sclero-corneal tissue have already become united, with round-celled exudation between them.

Von Graefe pointed out that cystoid cicatrices are not met with in the cornea and we can easily understand how this is due to its not being covered by conjunctiva. A permanent gap established in it would lead to a leaking fistula. Cystoid cicatrices are rarely, if ever, met with anywhere but within a few millimetres of the sclero-corneal margin—i.e., they are rarely if ever met with anywhere except in the region in which prolapses of folds of iris are likely to occur. It is the loose and mobile character of the iris which allows of a piece of it so readily protruding into a wound. The more firmly fixed and stretched arrangement of the other portions of the uveal tract, the ciliary body and choroid, tends to prevent folds of them becoming entangled.

The pathological examination of eyes upon which operations have been performed has shown me that there are three conditions, presenting somewhat different clinical appearances, which result from entanglements of folds of iris in a scar. More than one of these conditions may be present in the course of the same cicatrix. First, there is the typical translucent cystoid cicatrix, the condition which is essential for its formation being the protrusion of a fold of iris through the whole thickness of the sclero-corneal tissue, so that there is nothing but conjunctiva external to its most prominent part. A tendency to increase of tension after healing of the wound favours its development, for when the tension is increased, the gap, which is a weak spot in the walls of the globe, more quickly stretches, the iris lining it consequently becoming more rapidly atrophied and permeable by the aqueous humour. (After a cystoid cicatrix is once established the tension is often found slightly minus, due to the ready escape of the aqueous humour through it into the sub-conjunctival tissue.) The smaller the fold of iris entangled, provided it is sufficient to line completely both edges of the sclero-corneal wound, the more readily will the cystoid condition develop, for then there is less iris tissue to become stretched out and atrophied. Thus the condition is often met with after iridectomy, when a portion of the root only of the iris is left to become entangled as a fold in the wound.

The second condition which results from the incarceration of a fold of iris is what would be termed clinically a bulging scar. In it the fold does not extend throughout the whole thickness of the sclero-corneal tissue, so that from before backwards there is conjunctiva, reunited anterior layers of sclero-corneal tissue, entangled iris, and then a gap in the posterior layers of the sclero-corneal tissue. Such a spot in the walls of the eyeball would also be a weak one and, as the result of increase of tension, or even sometimes as the result of normal tension, liable to give and bulge. But owing to the presence of the reunited anterior layers of sclero-corneal tissue it does not allow of the filtration of aqueous humour through it and has not the translucent appearance of a cystoid scar.

The third condition is what might be spoken of as a staphylomatous scar, though the name does not very definitely distinguish it from the previous condition. It is met with when the whole length of the iris from its ciliary to its pupillary margin has become prolapsed as a fold into a wound at the sclero-corneal margin, so that its entire thickness is kept from reuniting. Before the whole iris becomes sufficiently atrophied to be permeable by the aqueous humour it is capable of considerable distension. Hence in this condition a large, thin-walled, greyish prominence of considerable dimensions forms in the region of the scar. This is the form of cicatrix which frequently resulted from the operation of sclerotomy as performed by the late Mr. Bader, who after completing his incision encouraged the iris to prolapse.

SUPPURATIVE PANOPHTHALMITIS IN EYES WITH CYSTOID SCARS.

The chief danger in connexion with cystoid scars is, as was pointed out by von Graefe, the liability of such eyes to become the seat of a suppurative panophthalmitis months or years after the healing of the wound. Many cases of this sort have now been recorded. The following is a typical one in which I have had the opportunity of making a pathological examination of the eyeball.

A man, aged 20 years, was admitted to the Moorfields Hospital in September, 1893. His left eye was said to have been first affected when he was two years old; he never remembered having seen much with it. He had had several operations performed, the first when he was three and a half years old. One of these had resulted in the formation of a small cystoid scar at the lower and inner part of the corneal margin. Three weeks previously to admission to the hospital, while boxing, he received a blow on the defective eye. The lids afterwards became discoloured and the eye inflamed and watery. On admission there was conjunctival and ciliary injection, haze of the cornea, an hypopyon, an opaque lens, and a coloboma of the iris down and in, in the direction of the cystoid scar. The tension was minus and the vision reduced to bare hand movement. The eye was excised and on examination, in the region of the cystoid scar, a well-marked gap in the sclero-corneal tissue was seen, lined by the root of the iris. The lens was *in situ*. There was extensive suppuration in the vitreous, most intense, and radiating from the lower and inner part of the ciliary body. Microscopically extensive round cell infiltration could be seen in the sub-epithelial tissue around the scar, and extending along the iris tissue incarcerated in it. There was also much round cell infiltration of the ciliary body and vitreous in its neighbourhood. In this case I think there can be no doubt that the infection of the eye passed through the cystoid cicatrix and was consequent upon the blow. This blow may have caused an abrasion of the epithelium over it or started an inflammation of the conjunctiva in the course of which the epithelium overlying it became softened; in either case, a route being formed for the passage of infective material into the sub-epithelial tissue of the conjunctiva it had evidently spread into the iris tissue adherent to that membrane and so through the gap in the sclero-corneal tissue to the ciliary body.

Wagenmann[4] has collected 13 cases from Leber's clinique in which suppurative hyalitis occurred at periods varying from a few months to some years after the healing of a wound and in which a cystoid cicatrix or entanglement of iris was present. He made a microscopical examination of 11 of the eyes and in all of them found micro-organisms. He considers that the history and anatomical appearances in these cases is in favour of a new infection of the cicatrix from without rather than that the micrococci entered the wound before it healed and had then for a long time remained inert, or that they had been brought to the cicatrix by the circulation and found there a congenial soil.

SEROUS AND PLASTIC INFLAMMATION IN EYES WITH CYSTOID SCARS OR SUB-CONJUNCTIVAL ENTANGLEMENTS OF IRIS.

It seems, then, that there is good evidence that the infection which gives rise to a suppurative inflammation may find its way into the interior of the eye along the track of a piece of sub-conjunctivally prolapsed iris some considerable time after a wound has healed. It would be very probable, therefore, that the infection which gives rise to less severe forms of inflammation, of a serous or plastic type, might gain access to the interior of the eye in a similar manner.

[4] Archiv für Ophthalmologie, 1889, Band xxxv., Abtheilung 4, S. 116.

The following is the brief epitome of a case, which I have elsewhere recorded in full, in which this is what seems to have occurred.

A lady had an iridectomy performed for chronic glaucoma; this was followed by relief of tension and the formation of a cystoid cicatrix. A year later when out driving she caught cold in the eye, after which iritis ensued with the formation of posterior synechia. The eye was excised for the relief of pain and microscopical examination showed the atrophied root of the iris and anterior part of the ciliary body lining the cystoid scar.

The next case which I wish to bring to your notice is that of a woman, aged 56 years, who was struck on her right eye by a fist and who attended as an out-patient three days later, when it was found that there had been a rupture of the sclerotic extending round and concentric with the upper half of the cornea, but without any lesion that could be detected of the conjunctiva. The iris was drawn up into the rupture so as to simulate a coloboma. 24 days later she again attended the hospital with circum-corneal injection in the left eye, iritis, and numerous posterior synechiæ. She stated that 18 days after the injury she first noticed a dimness of sight in that eye. The right eye, which was at that time also much inflamed, was then excised. The left eye, in spite of treatment, ultimately became quite blind. Microscopical examination of sections at the seat of the rupture in the right eye showed the epithelium of the conjunctiva forming an unbroken layer, and in the tissue immediately beneath it and superficial to the sclerotic much round-celled infiltration. The iris was folded in two in the middle and drawn into the fibrous tissue at the seat of the rupture. In this position it was much thickened with infiltration of small round cells, as also was the ciliary body and choroid in the interior of the eye.

In this case infection evidently found its way into the sub-epithelial tissue of the conjunctiva and caused cell exudation there, though no apparent lesion of it was discovered. The iris lying in contact with the sub-conjunctival tissue next became affected, and along it through the line of the rupture in the sclerotic infection spread to other portions of the uveal tract in the interior of the globe, exciting in them a plastic inflammation. The plastic inflammation thus started, like plastic inflammation of the uveal tracts started by penetrating wounds of the eye, was capable of exciting inflammation of a similar character in its fellow eye—that is, sympathetic ophthalmitis. Other cases similar to this have been recorded; Schirmer collected several, in some of which the evidence as to absence of any lesion of the conjunctiva seemed undoubted.

How Sympathetic Ophthalmitis may arise Months or Years after the Receipt of an Injury.

The possibility of infection which gives rise to a serous or plastic inflammation finding its way into the interior of the eye from the sub-conjunctival tissue along the track of a piece of prolapsed iris offers, I think, a possible explanation of the way in which sympathetic ophthalmitis may be set up months or years after the receipt of a wound to the exciting eye. In such cases it is usual, previously to the onset of the sympathetic disease, for some fresh attack of inflammation or irritability to have been noted in the exciting eye. Indeed, a committee of the Ophthalmological Society of the United Kingdom after much collective investigation could only find nine undoubted cases of sympathetic ophthalmitis arising after a long interval in which such an attack was not noted in the exciting eye, though they describe those in which it was present as fairly numerous. The fresh attack of inflammation or irritability in these cases is probably the starting-pointing of fresh infection of the exciting eye from without. Any eye with a sub-conjunctival entanglement of the uveal tract is probably liable, as the result of some conjunctivitis in which infective material enters the sub-epithelial tissue, to become the starting-point of sympathetic disease, no matter how long a time may have elapsed from the receipt of the original injury.

How Sympathetic Ophthalmitis may arise after the Operation of Abscission.

Eyes which if left to themselves were not likely to have started sympathetic inflammation have sometimes had the operation of abscission performed on them, and then, after complete recovery from the operation, as the result of some fresh irritation, such as that caused by the wearing of an artificial eye, have become the exciting cause of an attack of sympathetic ophthalmitis. The way in which such a course of events may be brought about is, I think, suggested by the following case.

An eye was wounded by a nail and the same day the operation of abscission was performed. Two and a half years later the stump of the eye which was left, having become irritable and painful, was excised. Pathological examination of it showed that at the abscission operation the sclera had been divided close to the corneal margin; on one side nearly all of the ciliary muscle had been left, whilst on the opposite side it had in great part been removed. The retina was detached from the choroid but remained adherent at the optic disc; some remnants of degenerated vitreous were contained between its folds. The lens was absent. Microscopical examination of the cicatrix where the two edges of the sclerotic had been brought together showed a piece of the anterior portion of the ciliary body incarcerated in it. Beneath the epithelium in the sub-conjunctival tissue overlying the cicatrix was some round cell infiltration; there was also much round cell infiltration of the entangled piece of the ciliary body lying in the cicatrix. The infiltration had not, however, extended to the uveal tract within the eyeball, though it probably would have done so if the eye had been left and not enucleated. This eye might then later have excited sympathetic inflammation in its fellow. I may here remark that an entangled piece of the uveal tract may easily escape detection by clinical examination. To be sure that no entanglement is present it is necessary to examine microscopically sections taken from different portions of the whole length of a cicatrix. The above case is one in point, clinically no entanglement was noted.

A Reason why Wounds of the Ciliary Region are Specially Prone to be Followed by Sympathetic Ophthalmitis.

The ciliary region is the part of the eye in which sub-conjunctival prolapses of the uveal tract are most likely to occur. Behind the ciliary region the choroidal tissue but rarely prolapses through an opening in the sclerotic; it tends to retract away from the sides of the wound when divided. In wounds of the cornea entanglements of the iris may occur, but then the iris is not left with a vascular membrane lying over it prone to inflammation like the conjunctiva. The possibility of sub-conjunctival entanglements of the iris or ciliary body forming the track along which inflammation likely to excite sympathetic disease may enter an eye, any time after the receipt of an injury, may be one reason why wounds of the ciliary region are specially liable to be followed by this complication.

Decrease in the Amount of Sympathetic Ophthalmitis.

Ignorant as we still are as to the nature of the infective agent which causes sympathetic ophthalmitis and as to the course which it takes in travelling from one eye to the other, it is satisfactory to be able to show that at the Royal London Ophthalmic Hospital, Moorfields, of late years there has been a gradual decrease in the number of cases of this disease admitted for treatment. Thus, in the 15 years during which I have been connected with that institution (from 1884 to 1898) I find, dividing them into three quinquennial periods, that from 1884 to 1888 there were 97 cases of sympathetic ophthalmitis admitted, out of a total of 10,676 in-patients, or 0·9 per cent.; from 1889 to 1893 there were 62 cases of sympathetic ophthalmitis admitted out of a total of 10,095 in-patients, or 0·61 per cent.; and from 1894 to 1898 there were 47 cases of sympathetic ophthalmitis admitted, out of a total of 10,366 in-patients, or 0·43 per cent. This decrease in the amount of sympathetic ophthalmitis may in part be due to more thorough aseptic and antiseptic precautions. I think, however, that it is also in part attributable to the greater care which surgeons have instinctively come to take in avoiding entanglements of the iris in their operations, and in clearing accidentally inflicted wounds as much as possible of any incarcerated portions of the uveal tract.

Dangers resulting from the Prolapse of Tags of Vitreous Humour.

I have now to bring before you a specimen which exhibits another, probably not infrequent, way in which infective inflammation may gain entrance to a wounded eye, but in which the necessary conditions will not exist for any great length of time after the infliction of a wound.

A woman, aged 61 years, who had suffered from glaucoma in her left eye for four years, which had rendered it quite blind, with the hope of relieving pain had a puncture of the sclerotic performed with a Graefe's knife about the equator of the globe to the inner side of the superior rectus muscle. Ten days later the eye, being still very painful and the tension much raised, was excised. Pathological examination showed thickening and abnormal adhesion of tissue to the sclerotic between the superior and internal rectus muscles and just behind the line of their insertion. Yellow streaks were seen in the vitreous radiating from this position, where it was abnormally adherent to the retina. Microscopically, in the region of the incision a gap was seen in all three tunics of the globe passing through the anterior part of the choroid, the edges of which had become somewhat retracted, and through the retina just behind the ora serrata. Lying in the gap and protruding a little way on the external surface of the globe was a portion of the vitreous humour much infiltrated with small round cells and continuous with the rest of the vitreous in the eye, which in the neighbourhood of the wound and radiating from it was similarly infiltrated, as also were the divided edges of the retina and choroid.

There can, I think, be no doubt that in this case the prolapse of tag of the vitreous humour formed a channel along which inflammatory infection was able to travel into the interior of the eyeball. The possibility of infection gaining entrance from the conjunctival sac in this manner through a scleral puncture intentionally made can generally be guarded against by first displacing the conjunctiva in the position at which the operation is to be performed, so that when it is completed the openings in the conjunctiva and the sclera do not correspond. It shows also the importance of drawing together the edges of a scleral wound accidentally inflicted with superficial sutures.

Another surgical operation in which prolapses of tags of vitreous humour are sometimes met with is that of needling a membrane after extraction of cataract. Pieces of vitreous humour which follow the needle on its withdrawal may for days afterwards be seen as filamentous processes on the surface of the cornea. I have several times seen eyes in which such a complication has occurred become the seat of troublesome inflammation. I may add that since adopting the method of introducing the needle through the sclero-corneal margin instead of through the cornea for the discission of a membrane I have not had any prolapses of this nature.

MICROSCOPICAL APPEARANCES OF DIFFERENT FORMS OF MEMBRANES LEFT AFTER EXTRACTION OF CATARACTS.

The various conditions seen microscopically in membranes left after the extraction of cataracts are of considerable practical as well as pathological interest. The hyaline lens capsule left after removal of a cataract usually appears thicker than it does in the normal condition. This thickening is not due to any addition to its substance, for it is observed in eyes in which too short a time has elapsed since the removal of the lens to allow of any new growth. It is, I think, accounted for by the elastic character of the membrane, which is on the stretch and elongated when it surrounds the lens, but after its removal becomes shortened and thickened. Though there is a certain amount of shortening, it is not usually sufficient to allow of the anterior part of the capsule lying smoothly in contact with the posterior part over any large area. The anterior part is generally thrown into several folds. These folds by themselves must tend to break up rays of light and to cause some defect in vision; they are, however, nearly always associated with one of the other conditions to be mentioned directly. The microscopical examination of opaque membranes after the extraction of cataracts shows that they may be classified under the following headings: (1) retained lens substance; (2) new growth of capsule cells; and (3) adventitious fibrous tissue.

1. After the extraction of a cataract any lens substance which is left is at first exposed through the opening made in the capsule to the action of the aqueous humour, but later the opening becomes sealed up by the proliferation of the capsule cells at its margins; any lens substance thus locked up, which if not originally opaque will have become so, is shut off from the dissolving fluid. A lens, unless extracted in its capsule, is hardly ever removed so completely that some of its peripheral portions are not left which become closed up in this way. It is, of course, only when portions of lens substance are retained in the pupillary area that they give rise to any disturbance of vision, and opacity due to it is seen directly after extraction or within a few days of the operation. Lens substance retained in this way for several years will sometimes have calcareous matter deposited in it.

2. The epithelial cells lining the capsule in the region of the nucleated zone, when left after the extraction of a cataract, tend to proliferate, shift round, and then become separated from the capsule, as they do when the lens is intact. They do not, however, as they afterwards enlarge, become flattened out into lens fibres, but form large vesicular cells, sometimes oval, sometimes circular, in shape, this alteration being due to the lessened amount of pressure to which they are exposed. The cells lining the more central portions of the capsule sometimes, also, multiply and develop into the same swollen, bladder-like cells, the capsule then being raised into prominences over little groups of them. A more frequent result, however, of the proliferation of the cells lining the more central portions of the anterior capsule is the lengthening of them out into spindle shapes and into delicate fibres, which form a dense laminated tissue. It is with this sort of tissue that the opening left in the capsule after the removal of a cataract becomes sealed up, and with this sort of tissue the spaces left by the rucking of the anterior capsule most frequently become filled. This tissue exactly resembles that which is met with in anterior polar opacities, which is produced in a similar way, and like it varies in its density according to the time which has elapsed since its formation. Occasionally when it has been in existence for a long time hyaline bands are met with between the laminæ. It is the formation of this sort of tissue which gives rise to the opacity causing deterioration of vision coming on some time after the extraction of a cataract, and the longer it has existed the more fibrous, dense, and tough does it tend to become; consequently the more difficult to cut or tear with a needle.

3. Adventitious fibrous tissue may form as the result of cell exudation in iritis on the front of the anterior capsule after, extraction or behind the posterior capsule about the hyaloid of the vitreous as the result of cyclitis. Sometimes a blood clot on the anterior capsule will form a sort of matrix in which fibrous tissue will develop.

In severe cases of iridocyclitis the anterior and posterior capsule may become embedded in fibrous tissue, forming a dense partition between the aqueous and vitreous chambers. It is the contraction of adventitious fibrous tissue on the surface of the anterior capsule, united to the extraction scar, that gives rise to an updrawn pupil after the removal of a cataract. I have examined microscopically an eye in which at the operation for the extraction of a cataract an opening in the lens capsule was made by grasping and tearing a piece of it away with forceps and which eleven years later was excised on account of detachment of the retina, which was thought possibly might be due to a new growth. The sections showed that about two-thirds of what may be spoken of as the anterior capsule with its lining epithelium had been removed opposite the pupillary area the posterior capsule without any lining cells alone being left. It is obvious that if a portion of the anterior capsule is removed in this way any cortical lens substance which is left cannot in the region from which the piece has been torn become re-enclosed away from the action of the dissolving aqueous humour; so that any opacity occurring after the removal of a cataract due to opaque cortical substance in which capsulotomy was thus performed would only be of temporary duration. Further, no opacity could form in the region from which the piece had been removed due to the proliferation of the cells lining the anterior capsule. Occasionally in cataractous lenses cells are met with lining the posterior capsule where normally they are absent. If these were present they would be left both when the capsule is opened with forceps and with the cystotome. Whether if left freely exposed to the aqueous humour they would be capable of proliferating and causing some opacity I am unable to say, but seeing that lens fibres, which normally develop from them, are dissolved by the aqueous humour I think it is improbable. The removal of a piece of the anterior capsule opposite the pupillary area with forceps would seem, therefore, to be a procedure likely to obviate two of the causes known to give rise to secondary opacities.

RADIOGRAPHIC RESEARCHES ON THE

TOPOGRAPHICAL RELATIONS OF THE BRAIN, THE FRONTAL AND MAXILLARY SINUSES, AND THE VENOUS SINUSES OF THE DURA MATER TO THE WALLS OF THE SKULL.

BY DR. PAUL REGNIER,
PROFESSEUR AGRÉGÉ, SURGEON TO THE HÔPITAL LARIBOISIÈRE;
AND
DR. JULES GLOVER,
ANCIEN INTERNE DE LA CLINIQUE OTO-LARYNGOLOGIQUE DE L'HÔPITAL LARIBOISIÈRE.

(*Translated for* THE LANCET.)

THE present paper is an account of a research undertaken by us in which radiographic methods were applied to the investigation of the anatomy of the skull and the face. The observations were made in the Radiographic Laboratory at the École Pratique of the Faculty of Medicine of Paris. 14 radiographs, together with our memoir, were submitted to the Paris Academy of Medicine at the meeting held on August 10th, 1897. Reproductions of three of our radiographs will be found in the *Journal des Praticiens* of Sept. 4th, 1897, and also in *La Radiographie*. The investigations led us to the following results:—

1. Regarded in its surgical aspect the topography of the skull and brain may be studied by radiographic methods, allowance being made for the fact that the views which are obtained by the processes in question inevitably present some very slight distortions. By means of radiography it is possible to see the brain through the skull. More than that, an important guide-mark in the study of the topographical anatomy of the brain and skull is furnished by the circumstance that in the photographic plate it appears to be possible to superpose the outline of the cranial sutures on the outline of the fissures which separate the cerebral convolutions from one another. By these methods the relations between the cerebral convolutions and the walls of the skull, so interesting from the point of view of surgical intervention, can be studied with almost no preliminary preparation which might have the effect of materially modifying the exact relations between the brain and the skull. Similarly we may point out that on the radiograph of the cerebral convolutions, viewed through their bony covering, the outlines and the form of the lateral ventricle of the cerebral hemisphere are very exactly traced.

2. The immediate relations existing between the venous sinuses of the dura mater and the skull, and in particular those existing between the lateral sinus and the skull, may be defined both in the child and in the adult. Injections of the venous sinuses of the dura mater made with liquids which ultimately become solid, and which hold metallic substances in suspension, as well as some other devices to the same end, have enabled us to see these sinuses very clearly through the bony wall. Our radiographs show the lateral sinus, as our researches were particularly directed to this important point of surgical anatomy.

3. We have also been able to study, especially in dried preparations, the extremely variable extent and form of the cavities and bony cells of the mastoid process, as well as of the maxillary, frontal, and sphenoidal sinuses, and of the ethmoidal cells.

4. It has been possible for us to recognise in the infant and in the adult the exact position with reference to the outside of the skull occupied by the petrous portion of the temporal bone and the three successive levels of the base of the skull. We have easily obtained, in specimens covered with their soft parts, the opaque triangular outline of the base of implantation of the petrous portion on the squamous portion of the temporal bone, as well as the outline of the three successive levels of the base in their exact relation to the external wall of the skull.

MODE OF PREPARATION OF THE SPECIMENS AND METHOD OF PROCEDURE

For our anatomical preparations we used sections of the head through the middle line with the view of proportionately diminishing the number of bony surfaces, of which there would be too many if the entire thickness of the head had to be traversed by the cathodic rays. One must be careful to select young subjects in whom the cranial sutures are not yet ankylosed. Before making the section of the head in the vertical and antero-posterior directions the specimen was injected with formol introduced by the carotid artery. This arterial injection was repeated two or three times at intervals of one or two days with the object of hardening the brain without appreciably changing its shape or size. The soft parts covering the skull and face were carefully removed and the antero-posterior section of the specimen was not made until after the lapse of a period of three weeks. The cerebral hemisphere, hardened *in situ*, was then carefully removed from the skull, freed from its pia mater, and replaced in its former position in the skull. These manipulations cannot alter the mutual relations of the brain and the skull provided that they are kept within the narrowest possible limits. On this account we abandoned the idea of making casts of the brain, for in them the conformation of the part is more liable to become altered, even when it has been hardened by formol or some other dehydrating agent. The brain must be freed from the pia mater if we wish to have the convolutions visible on the photographic plate, for when it is covered by the meninges the representation of it is less sharp. Moreover, it is advantageous by a vertical section to get rid of the convolutions of the internal aspect of the cerebral hemisphere, if one wishes to avoid having on the plate any confusion between the convolutions of the internal aspect and those of the outer surface of the hemisphere. The injections of the venous sinuses were made with bronze powder held in suspension either in a solution of wax in alcohol or else in tallow. A still better result is obtained if the course of the sinuses is indicated on the specimen by means of small metallic points—pins, for example—which come out deep black on the plate. Our radiographs of the dried skull of the adult and infant deserved particular attention, for in them the extent and the conformation of the bony cells were very plainly to be seen, both at the level of the mastoid process and at the level of the bony sinuses of the face. Our various radiographs were taken with Colardeau-Chabaud cylindrical focus tubes. The distance from the tubes to the sensitive plate was always 45 centimetres (18 inches), a distance which enabled us to obtain sharp pictures. The length of the exposure varied according to the state of the vacuum of the tube, from a few minutes to 10 and 40 minutes.

INFERENCES AND APPLICATIONS OF OUR RESEARCHES TO THE METHODICAL STUDY OF THE SURGICAL ANATOMY OF THE BRAIN AND SKULL.

The superficial situation of the venous sinuses of the dura mater, of the cells of the mastoid process, and of the frontal and maxillary sinuses, and their definite relations to the external surface of the skull, which give easy access to them in a host of surgical interventions, are sufficient to show, on the one hand, the ease with which it was possible to obtain the results at which we have arrived, and, on the other hand, the practical importance which these results seem to us to possess. If a certain number of radiographs of different anatomical specimens are taken, as they were by us, and if they are compared with one another, it is easy to appreciate all the anomalies and variations of the size and shape of the frontal and maxillary sinuses, and this comparison, being made with photographs, is much more exact than the method ordinarily followed in anatomical treatises—namely, the comparison of drawings of a series of sections cutting the bones of the face in all directions. In many of our preparations the lateral (venous) sinus formed a part of the mastoid process, a fact which was recognised long ago but which had not been so clearly demonstrated without resorting to special methods of preparation. In some specimens it corresponded to the anterior part of the mastoid or even to its centre, or, finally, in general, to the posterior fourth of the process. Allowances have to be made for some distortions of the picture, and, this being done, when radiographs obtained from a child are compared with those obtained from an adult it will be seen that in the normal

state the lateral sinus is less closely connected with the mastoid process in the adult and that this important venous channel seems to lie at a progressively greater distance from the bony process in proportion as the age of the subject advances from infancy upwards. At the level of the mastoid process not only are the cells of the body and of the tip very clearly recognisable according as the bony tissues contain air or are dense in their texture, but one can also easily make out certain mastoid cells which often extend backwards and downwards into the diploë between the two tables of the occipital bone. One sees also cells of still greater interest from a surgical point of view which occupy a surface of considerable extent immediately above the external auditory meatus. Moreover, if the tip of the petrous bone be removed from the preparation by a section passing internal to the tympanic cavity it will be easy to see the antrum and the tympanic cavity. In some radiographs the petrous bone is, in fact, so transparent that the orifice of the internal auditory meatus can be seen. It is unnecessary to refer in detail to the anatomical and surgical interest attaching to these results, which we were the first to obtain by utilising the transparency of the petrous bone under radiographic examination. The question is one of special importance at the present time, when so much attention is being bestowed on the operative details of the combined trephining of the mastoid process and the tympanic cavity in complicated suppurative otitis media.

With reference to the views of the cerebral convolutions obtained through the bones of the skull it may be said that a minimum distortion of the image can be reckoned on when care is taken to have the incidence of the cathodic rays exactly vertical to the anatomical preparation and consequently to the sensitive plate; in the next place the tube ought to be at a sufficient distance (50 centimetres—i.e., 20 inches—as we have said) in order that the cone of emergent rays may present its minimum of divergence. With plates taken with these precautions (and with such plates only) the topography of the brain and skull in their various aspects can be studied in the adult and with still more facility in the child.

Notwithstanding the undeniable value of the simple method by the insertion of pins through the walls of the skull into the cerebral convolutions practised long ago by Gratiolet and Broca, who were the first to study the topography of the brain and skull, it is none the less true that it would be extremely interesting to resume these complicated investigations by the aid of the wonderful method which, as we now recognise, enables us to obtain a permanent and detailed representation of the brain, irregular in form as it is, even through the bony structures which contain it. We are convinced that our pioneer researches will be the prelude to others.

THE APPLICATION OF OUR RESEARCHES TO THE CLINICAL EXPLORATION OF THE BRAIN AND THE OSSEOUS CAVITIES OF THE FACE.

On examining a child's head with the fluorescent screen it is sometimes possible to perceive a clear patch corresponding to the cavity of the lateral ventricle, especially when this cavity is dilated by more or less serous effusion in the case of sufferers from hydrocephalus or meningitis. Referring to the results obtained on the anatomical preparation by taking radiographs of the brain through the skull, a method which gives a detailed representation of this ventricular cavity, it is obvious that a radiograph taken in such a case from a living child will afford more exact information than a mere examination with the fluorescent screen would do. One of us, with M. Rémy, using the fluorescent screen, has seen in the head of a child suffering from meningitis a clear patch corresponding to the median portion of the brain. This patch exists normally in young infants, but its transparency is certainly more perceptible in the pathological state when the ventricle is dilated with fluid.

In conclusion, we will say that it is easy by mere examination with the fluorescent screen to verify the transparency and the condition as to emptiness of the frontal and maxillary sinuses, and perhaps even of the mastoid cells, with much more exactness than by making use of the ordinary electric light. Instead of employing a powerful light introduced into the mouth for the illumination of the maxillary sinuses, or applied to the upper and inner margin of the orbit for the illumination of the frontal sinuses, we recommend having recourse to cylindrical focus tubes. With this object, and in order to simplify the manipulations, the tube is fixed on a small and light stand made of ebonite, or even of wood, and the observer wears caoutchouc gloves to protect himself against shocks from the current. The tube can now be brought near to, or removed from, the patient's head until the proper distance is found without causing the patient any inconvenience or danger. In the examination of the face all the cavities become visible at the same time.

TUBERCULOUS DISEASE OF THE KIDNEY: ITS ETIOLOGY, PATHOLOGY, AND SURGICAL TREATMENT.

BY DAVID NEWMAN, M.D. GLASG.,
SURGEON TO THE ROYAL INFIRMARY, GLASGOW.

TUBERCULOUS lesions of the kidney present themselves to the surgeon in many phases. In some instances when first seen by him the disease is so advanced that little can be attempted to stay its progress or to mitigate the suffering of the patient, while in other cases the malady is still limited in extent and much may be done by early surgical intervention. Even a few years ago renal tuberculosis was looked upon as almost a certainly fatal malady, but now that new and more exact methods can be employed in detecting the disease in the early stage the surgeon is not uncommonly placed in a position to advise and to carry out operative measures with considerable hope of success.

Various attempts have been made to classify diseases of the kidney into "surgical" and "medical," but it must be admitted that any such grouping is not only arbitrary and unscientific but productive of much misunderstanding and harm. An endeavour to follow such a classification has been attempted by M. Du Pasquier and M. Brissand, who adopt even now the nomenclature in use prior to the development of renal surgery. The old term "surgical kidney" was given to all secondary purulent lesions of the organ resulting from primary septic foci in the lower urinary passages—that is to say, the word "surgical" was employed to denote that the renal lesion was secondary to a malady requiring the surgeon's aid. It pointed to the etiology of the renal lesion rather than to the circumstances of how the disease required to be treated. In illustration of this it may be observed that the French writers just referred to designate as "medical" those cases of tuberculous nephritis in which the virus has been carried to the kidney by the blood, whereas those in which infective material has extended upwards from the lower urinary tract they regard as "surgical." This classification is imperfect and unsatisfactory from all points of view. Indeed, the very cases which are included under their classification as being "medical" are those most suited for surgical treatment. Take, for example, cases of caseous nephritis where the kidney has been invaded through the blood and the virus has given rise to a localised renal tuberculosis unassociated with active disease in other organs. Those cases while included by the writers above referred to as "medical" are the very ones which give the most satisfactory results to the surgeon.

To have an intelligent view of the present position of surgery to tuberculous disease of the kidney it is necessary to study very carefully the various modes of infection and the different phases of the morbid process. From a clinical standpoint tuberculous disease may be said to manifest itself in three distinct forms—namely, (1) acute miliary tuberculosis; (2) local tuberculosis or renal phthisis; and (3) chronic tuberculous or caseous nephritis. All these varieties are due to the presence of tubercle bacilli and to an infective process resulting therefrom, but the channels through which the virus reaches the kidney and the methods by which local infection takes place vary considerably.

The etiology of tuberculous lesions of the kidney has been carefully worked out and the different avenues of infection have been ascertained. Two conditions are necessary to the establishment of tuberculous disease in the kidney—the presence of a suitable nidus there and the conveyance of specific organisms to the part. Probably on account of its abundant blood-supply the healthy kidney tissue, although more vulnerable than other parts of the urinary tract, has a

remarkable power of destroying organisms introduced into its substance or of eliminating them from the system. To discuss how this is brought about is beyond the scope of the present inquiry, but an important clinical fact must be here referred to—namely, that tubercle bacilli carried by the blood from distant parts may be eliminated without any morbid change in structure being produced in evidence of their sojourn in the kidney. For example, they may be found in the urine of persons suffering from tuberculous disease of bone, of the lungs, or of other organs. Their presence, therefore, in the urine is not pathognomonic of tuberculous disease of the urinary tract. Although the observation of these organisms furnish positive proof that the patient is tuberculous the precise seat of the lesion remains to be determined. In cases where the kidney eliminates these bacilli without itself becoming involved in the tuberculous process it must be assumed as an explanation either that the quantity carried to the organ at a given time is too small or that the virulence of the microbes is insufficient to overcome the normal preventive power of the renal tissue and to produce the specific pathological effect. The natural power of the renal tissue in destroying micro-organisms may be rendered less powerful by abnormalities such as malformations of the organ or by disease. Hence we find that Bright's disease, cystic degeneration, amyloid degeneration, or congenital malformations and displacements all tend to make the kidney more liable to septic and tuberculous diseases, and, as in other organs so also in the kidney, injury or hæmorrhage may be an exciting cause of tuberculosis.

In order that tubercle bacilli may grow and multiply in the kidney it is necessary that they be conveyed by the blood stream to a part where there is a favourable soil for their growth and where they are not liable to be washed away by the current of blood or the flow of urine. Hence tuberculous foci are more likely to originate in the parenchyma of the organ than in the urinary passages. It is now quite recognised that the presence of the bacillus is the most important etiological factor in the disease, but at the same time other influences are at work in determining the establishment of the malady in the kidney. Acute febrile diseases, such as enteric fever, measles, scarlet fever, pneumonia, &c., and injuries produced by blows and falls are the most important predisposing causes. Sometimes the injury may not be severe enough to cause hæmaturia, but patients so frequently blame a fall or a blow that the surgeon cannot overlook insignificant traumata as possible causes. Suppose that tuberculous bacilli are present in the blood when a blow is sustained by the kidney, then the effusion of blood, with thrombosis of capillaries and the injury to the tissues, provide the conditions required. The following cases are illustrations of renal *phthisis ab hæmoptoe*.

CASE 1. *History of a fall of 26 feet; severe pain in the left renal region; hæmaturia and effusion of blood around the left kidney; apparent complete recovery from the injury; and two and a half years afterwards the patient suffering from advanced tuberculous disease of the left kidney.*—A man, aged 30 years, was admitted to the Glasgow Royal Infirmary on May 11th, 1893. While working on the deck of a steamer he had accidentally fallen into the hold, a distance of 26 feet. He was rendered unconscious and when admitted to the hospital was suffering from severe shock. Besides other injuries he complained of severe pain in the left lumbar region and the first urine passed after admission contained a considerable quantity of blood. On examination a distinct fulness and increased resistance was made out in the left flank and over this area the percussion was dull. The patient made a slow but steady recovery and he was detained in hospital until August 17th on account of the other injuries, the kidney condition having apparently been recovered from within a fortnight. The hæmaturia disappeared ten days after admission.

The patient was again seen on Nov. 27th, 1895, two and a half years after the accident, by Dr. D. McKellar Dewar, who recommended him to come into hospital, but this he refused to do, preferring to be under the care of his private medical attendant, with whom I saw him in consultation. He said that he had remained well and had been able to follow his occupation until the end of May, 1895, when he complained for the first time of a recurrence of the pain in the left lumbar region, and although on palpation a distinct dulness could be made out no fluctuation was detected. The urine was free from any deposit, blood, or albumin, but tubercle bacilli were not looked for. In November the urine contained an abundant muco-purulent deposit, six specimens of which were examined for tubercle bacilli, and in two of these bacilli were found. From May to November the patient's general health rapidly deteriorated, his appetite was impaired, and he lost 16 lb. in weight. The evening temperature was elevated irregularly and he complained of night sweats but there was no vesical irritation. By the end of December a distinct fluid accumulation was discovered in the left kidney and the patient was advised to have a nephrotomy performed, when the kidney was found to be occupied by a typical tuberculous pyonephrosis.

CASE 2. *History of a blow causing ecchymosis in the right lumbar region; hæmaturia of five days' duration with one recurrence on the eleventh day; severe pain and some swelling in the right renal region; six months after the injury the urine became muco-purulent and bloody; symptoms and physical signs of renal phthisis.*—A woman, aged 47 years, was admitted to the Glasgow Royal Infirmary on August 2nd, 1895. On inquiry it appeared that in January the patient had fallen from "house steps" a distance of eight feet and on falling struck her "right side" against the back of a chair. The blow was received on the right lumbar region and caused considerable ecchymosis between the lower ribs and the crest of the ilium. On recovering from the immediate shock of the injury she suffered severe deep pain in the region of the kidney and the urine first passed after the accident contained blood. The hæmaturia continued for five days after the injury and recurred once only on the eleventh day. There was some swelling in the region of the kidney but how long it lasted the patient did not know. Since the fall the "side" had always felt weak, but the pain was not severe till seven weeks previously to admission. About the same time she observed the urine to be dark in colour and to contain blood together with a white deposit. On admission the patient complained of a swelling in the right lumbar region. She had always been rather spare in body and lacking in colour, but she said that of late she had fallen off considerably. A month prior to admission she experienced pain in the lumbar region whenever she moved about and at the same time the urine presented the abnormal appearance above mentioned. On examination the whole space between the liver and the crest of the ilium was dull and fluctuant and presented the characteristic features of a large pyonephrosis, but there were no sudden discharges of purulent urine at any time. The specific gravity of the urine was 1012, it was strongly alkaline, and contained a considerable quantity of pus, some blood, and crystals of oxalate of lime; tubercle bacilli were numerous. On August 17th the kidney was incised, when a large quantity of pus, urine, and tuberculous débris was evacuated and a large cavity was scraped out with a Volkmann's spoon. Later in the history of the case the lungs became involved, there being dulness and abundant moist râles at the bases of both lungs behind, but at the apices there was no evidence of consolidation.

In both of the foregoing cases it was clearly shown by the history that the patients enjoyed perfect health until the occasion of the injury, and it may be safely presumed that the traumatism was the only cause of the hæmorrhage. In cases where slight indirect violence has been followed by the appearance of blood for the first time the question may be legitimately raised as to the presence of pre-existing disease, which may not up to the time of the accident have shown itself by hæmaturia, but in these cases the blows were severe and direct and of themselves sufficient to injure the kidney. The most reasonable explanation seems to be that the injury reduced the resisting power of the organ by the effusion of blood into its substance and that tubercle bacilli in the effused blood, or subsequently conveyed to the neighbourhood of the effusion, took root and multiplied, formed a centre of infection, and thus produced what may be called a renal *phthisis ab hæmoptoe*.

Again, septic inflammatory lesions of the pelvis or of the renal substance predispose to tuberculous disease.

CASE 3. *Acute tonsillitis and abscess, followed by what at first appeared to be a purulent embolic nephritis, but which ultimately became tuberculous.*—A man, aged 41 years, consulted me first in November, 1895, complaining of an acute inflammation of the right tonsil which culminated in the formation of an abscess. Three days after the abscess in the tonsil was opened and the temperature had returned to normal it suddenly rose again, and in the evening the

thermometer registered 104·2° F., without any recurrence of the throat affection. The patient, however, complained of considerable discomfort and a dull aching pain in the right lumbar region, and he had during the afternoon several severe rigors. The urine was at first increased in amount, excretion rising during the first three days after the onset of the renal pain to an average of 80 ounces in 24 hours. It was acid, its specific gravity was 1008, a considerable amount of mucus was deposited on standing, and it contained a moderate amount of albumin (0·3 per cent.) and some blood, but no pus. On the fourth day the patient had six rigors and for the first time pus appeared in the urine. The quantity was large at first and deposited rapidly from the urine in which it escaped. The urine had no unpleasant odour; the reaction was acid. The patient did not complain of any vesical irritation. The urine was examined on six occasions for tubercle bacilli, but none was found. Pus continued to be present in the urine for over two months, but during that time it gradually diminished in amount and at the end of February, 1896, the patient resumed his occupation and was lost sight of till July, 1898. Then he complained of marked vesical irritation, passing urine over 60 times in the 24 hours. The urine had all the characters of a tuberculous pyelitis. No operation was allowed, but when the kidney was removed post mortem it was found to contain numerous tuberculous centres.

In this case the mode of onset and the early history of the disease points to the formation of an abscess in the parenchyma of the kidney, rupturing into the pelvis and there setting up a chronic pyelitis, which at a later stage became tuberculous.

It may be well now to consider the methods of attack or the channels along which the microbes of tubercle may travel. The kidney may be invaded in four different ways:—1. By the blood stream. (*a*) The tuberculous particles may be so small as to be stopped only in the ultimate capillaries, where they give rise to numerous miliary deposits (in such instances the blood stream becomes contaminated while passing through tissues or organs foreign to the urinary apparatus); or (*b*) tuberculosis may arise from infective emboli passing into a branch of the renal artery, the tuberculous virus becoming disseminated over the area of its distribution. 2. By invasion along the lymphatics of the kidney from foci in the lower urinary tract. 3. By contagion along the lumina of the excretory ducts. 4. By spreading to the kidney from continuity with other organs. It must, however, be borne in mind that while primary infection is conveyed to the kidney by one of these channels the infective process becomes more complicated as the disease advances; indeed, the mode of extension comes to involve a combination of the processes just mentioned.

The kidneys communicate with the outer world by means of the lower urinary tract, and in some instances the blood supplying these parts may become contaminated by the tuberculous virus, but probably in the great majority of cases the blood becomes infected when passing through the vessels of the respiratory organs, the alimentary canal, or the mucous or cutaneous surfaces. Having entered the circulation the bacilli may be carried into the renal artery and may be eliminated from the kidney without any serious harm resulting. Durand Fardel has demonstrated the presence of tubercle bacilli within and around the glomeruli without their giving rise to any structural changes in the kidney recognisable by the microscope, and on several occasions I have seen tubercle bacilli in the cortex of the kidney in subjects of rapidly fatal pulmonary phthisis, while in the same cases during life I have failed to detect the specific organisms in the urine.

Infection by the blood stream.—(*a*) Obstruction of the capillaries. In acute miliary tuberculosis of the kidney the virus is conveyed by the blood-vessels and is widely disseminated, so that such cases seldom come under the cognisance of the surgeon. It may, however, be interesting to follow the changes in this acute process where the tuberculous nodules are small in size and all in about the same stage of development. The tuberculous virus being conveyed to the kidney by the blood-vessels the favourite seat of the disease is in the cortex, where the little miliary growths appear as small, semi-translucent, greyish streaks surrounded by a darker zone of deeply injected renal tissue. These miliary nodules are frequently arranged in rows or they form linear streaks (see Fig. 2) following the direction of the vasa interlobularia and present an appearance which closely resembles minute hæmorrhagic infarctions. In Fig. 1 the fibrous capsule is seen to be stripped off the cortex of the kidney and the deeply injected parenchyma is exposed, showing the numerous miliary tubercles as clear white pearly specks embedded in a chocolate-coloured background. In the illustration they are shown to be distributed irregularly, but in many instances of acute general tuberculosis the tubercles are arranged in groups or irregular

FIG. 1.

External appearance of a tuberculous kidney.

circles, following more exactly the arrangement of the vascular supply. Fig. 2 shows the section of a kidney in its long axes, the pelvis being laid open. The cortex is invaded by a great number of miliary tubercles forming clots and streaks. In some parts the tuberculous masses have joined together and have softened.

FIG. 2.

Section of a tuberculous kidney.

The mucous membrane of the pelvis and calices is much thickened and at the lower end of the section two cavities have formed which are filled with tuberculous débris. (After Rayer.) The regular arrangement is seen in a few cases, but in some of those which have come under my observation the tubercles have been distributed without any very evident relationship to the arterial supply, while in other instances the infective process

has appeared as if limited to an area supplied by a single branch of the renal artery. Borrel in his investigation into the etiology of renal tuberculosis found it necessary, in order to produce the disease, to inject infective matter into the aorta of animals, as when it was introduced into the veins even pure cultures of tubercle bacilli failed to pass through the lungs. As regards etiology he concludes that there are two forms of tuberculous disease, primary renal tuberculosis, where the virus is by some means introduced into the arterial current and in which the tuberculosis rapidly follows the inoculation, and secondary renal tuberculosis, which after inoculation takes two or three weeks to develop. The invasion taking place through the lymphatics leads to the formation of a caseous nodule and the production of caseous nephritis. Borrel calls this "granular tuberculosis of the kidney." There is no precise localisation, the tuberculous material occupying any portion of the parenchyma of the organ. In both forms of the disease the tubercle is clearly a connective tissue formation, the renal epithelium taking little or no part in the structure of the new growth. The same view is held by Virchow and Metchnikoff.

A considerable amount of labour has been devoted to the study of the origin of the various elements which come to form the miliary tubercle. In miliary tuberculosis the small tubercles consist of altered portions of the kidney connective tissue appearing in small circumscribed areas infiltrated by leucocytes which are at first clear in colour and tolerably well defined. The irritative action of the bacilli induces these early tissue changes. The connective tissue cells become swollen and undergo mitotic division, and because of their large size they have been called "epithelioid cells." At the periphery lymphocytes appear and they gradually increase in number. The toxic action of the bacilli is first seen in the centre of the focus where the "epithelioid cells" become hyaline and their outline indistinct. Ultimately the cells become fused into a homogeneous mass which subsequently degenerates, or the "epithelioid cells" may by proliferation of their nuclei without segmentation of their protoplasm come to form the so-called "giant cell" which was at one time considered to be characteristic of tubercle. At the same time the epithelium of the tubules undergoes fatty metamorphosis, the tubules become compressed by the abundant connective tissue formation around them, and the infiltrated leucocytes and epithelium swell up and undergo caseous necrosis, so that ultimately, should time permit, the whole infected area becomes disorganised. This degenerative change begins at the centre of the tubercle and extends towards the periphery, where the micro-organisms are most abundant. The degenerative changes are probably partly due to thrombosis of the capillaries as a consequence of the action of the toxin upon their walls, but the necrosis and caseation are doubtless also the direct result of the bacillary products. In some parts these little tuberculous masses coalesce and unitedly form patches of considerable size, which in the first instance are usually situated at the union of the cortex and medulla; but on account of the remarkable tendency which tuberculous inflammation has to spread they may ultimately involve a considerable portion of the kidney. In such masses blood-vessels larger than capillaries become occluded by thrombi and as a consequence further necrosis ensues. In this form of renal tuberculosis the disease is generally at first confined to the parenchyma of the kidney and does not immediately extend to the lower urinary tract.

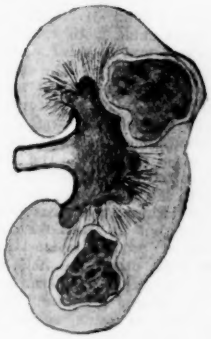
Miliary renal tuberculosis is always associated with tuberculous disease in other parts and is a disease which attacks children more frequently than adults. It may be preceded by tuberculous formations in any part of the body, but the most common precursor is phthisis pulmonalis. Next in order of frequency comes tuberculous meningitis, while in some instances lymphatic glands, joints, or bones have been found to contain the primary focus, and only in a few cases the prostate gland or the bladder have been named as the site of origin of the disease.

The discovery of the presence of renal miliary tuberculosis is frequently made for the first time after the death of the patient, and as the lesion does not give rise to any distinctive symptoms the disease is one which is to be inferred from the general circumstances of the case rather than definitely diagnosed; besides, it is one for which nothing can be done surgically.

(*b*) Tuberculous embolism of the arteries. There is another method by which the kidney may be infected. In place of conveying individual bacilli or small groups of bacilli the blood stream may carry an infected thrombus to the kidney, the artery in which it becomes impacted is closed, and the tuberculous virus is more or less disseminated over the area supplied by the blood-vessels. Hence we find considerable wedge-shaped areas of tuberculous disease in the kidney with little or no evidence of involvement of the pelvis or ureter. These masses may, however, break down and lead to a widely disseminated lesion, or, as is not uncommonly the case, tuberculous material may caseate or even become encysted (Fig. 4).

FIG. 3.

FIG. 4.



(Fig. 3 shows the longitudinal section of a kidney in which tuberculous disease is seen in different stages. In the peripheral portion of the cortex and extending towards the medulla there are numerous tuberculous infarctions in some of which caseation has taken place, while in others cavities have formed. In the medullary area there are five large cavities, all of which contained caseous matter and tuberculous débris, but none of them communicated with the pelvis, and the urinary tract was free from disease. Fig. 4 shows the section of a kidney containing two distinct isolated foci of tuberculous disease limited to the medulla and cortex of the organ, the pelvis being free from disease.)

The encysted form of the disease is of great importance to the surgeon, being in many instances amenable to operative treatment. Generally the disease is unilateral and involves only a portion of the kidney substance, although it may have more than one focus. While caseous nephritis arises in most instances as a consequence of tuberculous thrombosis it may be mentioned that in a few cases the renal lesion may be the result of an extension of the tuberculous process from the pelvis of the kidney to the parenchyma through the lymphatics or along the lumina of the uriniferous tubules.

CASE 4. *Tuberculosis limited to the right kidney; compensatory hypertrophy of the left kidney; tubercle bacillus; pus and albumin in the urine from the right kidney only; nephrectomy; cure.*—A man, aged 22 years, consulted me in July, 1897. At that time he complained of pain in the right lumbar region almost constantly present, but never very severe. On inquiring into the history of the case it appeared that the first departure from health was noticed three years previously. At that time he complained of frequent micturition, requiring to rise six or eight times during the night. The urine was copious, pale in colour, of low specific gravity, and contained no deposit. Polyuria and frequent micturition were the only symptoms during the first six months; at that time, however, pain was complained of and in the urine the patient noticed on one or two occasions a small quantity of blood. He never passed gravel or stone. Six months previously (February, 1897) he had noticed a white deposit which, according to his description, appeared to be pus; at the same time pain developed in the right lumbar region, occasionally accompanied by nausea and sickness. The appetite gradually became impaired and the patient was much troubled with sleeplessness and he gradually lost weight. When first examined he weighed 10 st.; he was 5 ft. 10 in. in height, thin, anæmic, and seemed highly nervous and anxious as to his condition. The thoracic

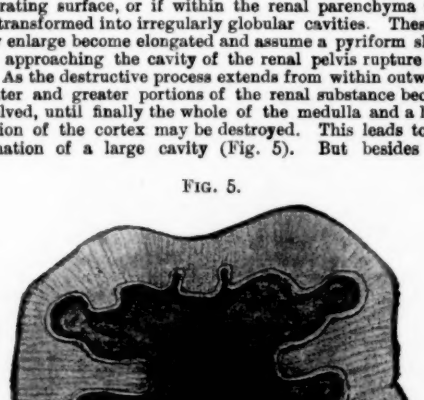
organs were normal, but there was slight enlargement of the liver and spleen. Both kidneys were distinctly felt on palpation and were found to be enlarged; the right was irregular in form, the lower extremity being rounded while the upper was more pointed, giving to the organ somewhat the form of a pear; the left kidney was uniformly enlarged. The urine was pale in colour; its specific gravity was 1008; it was cloudy, and on standing threw down a moderate deposit of mucus and pus; it contained no crystalline deposit; there was a small trace of albumin but no blood. On four examinations out of six tubercle bacilli were found. Examination of the bladder with the cystoscope showed it to be free from disease, with the exception that the orifice of the right ureter protruded and the mucous membrane covering it was deeply injected. Catheterisation of the ureters showed that all of the pus, the albumin, and the tubercle bacilli came from the right kidney; that from the left kidney was normal with the exception of being low in specific gravity. The conclusion come to was that the right kidney was the seat of tuberculous disease while the left had undergone compensatory hypertrophy. The right kidney was excised and was found to contain two considerable tuberculous foci, but the pelvis was not involved in the disease (Fig. 4). The patient made a good recovery and reported himself well in January, 1899.

In the early stage the lesion is limited to the substance of the kidney, the virus being conveyed in the blood stream only, but in the later developments the advancing tuberculous process comes gradually to be carried forward through other channels, unless a conservative inflammatory action closes the lymphatics and prevents extension. If the caseous material breaks down rapid destruction of the organ may result, so that in one specimen renal tuberculosis in all its stages may be seen. The order of infection can, however, be generally determined by careful observation.

In tuberculous pyonephritis infection may take place in various ways. The primary focus may be in the kidney substance, and in such cases the parenchyma may be greatly destroyed before the pelvis is seriously involved and the walls of the ureter thickened sufficiently to cause much or any obstruction to the escape of urine. While the organ may be enlarged by the caseous deposits which have come to occupy its substance the increase in bulk is seldom due to a retention of urine or of tuberculous débris in the pelvis. The ureter is patent and the degenerated tuberculous material is allowed to escape into the bladder to be discharged with the urine. So long as this freedom exists there is no pyonephrosis, but if the ureter becomes blocked by tuberculous thickening of its walls, by impaction of masses of débris, by cicatricial stenosis, or by twisting of the ureter, the secretion is then dammed back and then sudden and rapid changes take place in the morbid condition and in the clinical aspect of the case. The secretion of the kidney and the tuberculous débris, which is probably up till the present free from sepsis, is now very liable to contamination by pyogenic organisms, and within a few hours the whole clinical features of the case may become completely altered. It is easy to understand how large collections of fluid, tuberculous débris mixed with urine, should become contaminated by pyogenic organisms and large renal abscesses or pyonephrosis result. On the other hand, it is undoubted that they may remain aseptic for long periods.

Primary tuberculosis of the pelvis of the kidney is less common than secondary infection of that part. The principal seat of the disease is at the apices of the papillæ, in the calices, or in the pelvis, and from hence, partly by the blood stream and partly by the lymphatic channels, the material virus is carried within the substance of the kidney. The primary focus becomes occupied first by miliary tubercles and subsequently by caseous masses. In the course of a few weeks or months these masses form an irregular softened area, which by progressive peripheral infiltration spreads inwards. At the same time by infection through the blood-vessels and lymphatics, now, and to the naked eye, apparently independent nodules develop in the tissue around, while in the more remote parts of the kidney and in the mucous membrane of the pelvis fresh eruptions of opaque white nodules appear. In recent cases these diminish in size and number the more distant they are from the primary focus, but when the disease is of long standing the individual nodules cannot be distinguished. The constructive process which has just been described is rapidly followed by a destructive one. The tuberculous nodules, having attained a certain size, undergo caseous necrosis, break down, and when in the pelvis of the kidney they become replaced by a tuberculous ulcerating surface, or if within the renal parenchyma they are transformed into irregularly globular cavities. These as they enlarge become elongated and assume a pyriform shape and approaching the cavity of the renal pelvis rupture into it. As the destructive process extends from within outwards greater and greater portions of the renal substance become involved, until finally the whole of the medulla and a large portion of the cortex may be destroyed. This leads to the formation of a large cavity (Fig. 5). But besides the

FIG. 5.



Specimen of a tuberculous single kidney. The pelvis and calices are greatly dilated and the mucous surface is ulcerated and thickened. The parenchyma of the organ is not diminished in amount but rather increased from compensatory hypertrophy.

encroachment on the renal tissue by tuberculous disease dilatation and sacculation of the organ may be caused by a blocking of the ureter, ultimately producing a tuberculous pyonephrosis which sometimes, when the other kidney is free from disease, destroys all vestige of urine-secreting tissue. Should only one organ be involved the kidney may, by a drying-up of the contents of the pyonephrosis, become converted into a shrivelled, putty-like mass (Fig. 7). In old cases calcification may occur and a hard mass may form which is liable to be mistaken for a calculus.

CASE 5. *Bilateral renal tuberculosis without involvement of the urinary tract; the right kidney completely destroyed and caseous; the left kidney enlarged and occupied by tuberculous pyonephrosis; tuberculous disease of the sacrum, nephrotomy; death 18 days after from suppression of urine.*—A woman, aged 33 years, was admitted into the Glasgow Royal Infirmary on March 9th, 1899. She consulted me in private six weeks previously to admission, when she was advised to come into the ward as early as possible. She was a well-nourished woman, but she complained of symptoms of dyspepsia and of occasional attacks of severe pain in the region of the left kidney, generally limited to the lumbar region but occasionally extending down the thighs. The patient also complained of frequent micturition and discomfort in the bladder, which, however, subsided immediately the bladder was emptied. There was no history of hæmaturia, but the patient observed on many occasions a whitish deposit which from her description was evidently pus. When the patient was first seen a complete and systematic examination was made, and I concluded that she was suffering from a large pyonephrosis of the left kidney. The right kidney could be felt and it appeared to be normal in size and in situation, and the patient stated that as far as she was aware it had not caused her any trouble. The urine had a specific gravity of 1016 with an acid reaction; it contained a trace of albumin, a few red blood corpuscles, and pus was deposited on standing equal to about 2 per cent.; no crystalline deposit was thrown down, no tubercle bacilli were discovered, and there was no sugar. The heart, the lungs, and the liver and spleen were normal. The left kidney was so enlarged as to occupy the whole space between the costal

margins and the crest of the ilium, and it extended as far forward as to within one and a half inches of the nipple line. The swelling was dull on percussion and slightly fluctuant and the organ was distinctly tender on palpation. The patient was advised to come into the Royal Infirmary at once, but this she failed to do until six weeks later. Complete suppression of urine occurred on March 8th, associated with rigors, elevation of temperature, and profuse sweating. The symptoms were so urgent that the patient was sent in on the evening of the 9th, and on the following morning it was found necessary to perform nephrotomy, when one and a half pints of pus and urine were evacuated. The patient stated that she had suffered from pain in the left side for 15 years, but that it had been specially severe during the past three years. After the operation the left kidney continued to discharge a considerable quantity of urine which for the first three days was mixed with pus, but after that time the pus diminished considerably; no urine, however, passed from the urethra, and on passing a catheter the bladder was found to be empty, the inference being that no urine was being secreted by the right kidney. During the first 15 days urine in considerable quantity drained away from the left kidney, but on March 25th it was observed that although the drainage-tube was still communicating with the cavity in the kidney almost no urine escaped. The patient complained of an increased amount of pain, sickness, and diarrhœa. Diuretics produced no effect and she died three days after from suppression of urine.

Post mortem the left kidney was found to be fully three times the normal size and a large cavity was discovered occupying the pelvis and parenchyma of the organ, but on making allowance for the displacement of the substance of the kidney by disease the secreting tissue remaining appeared to be much in excess of what is found in the normal kidney, probably due to a compensatory hypertrophy (Fig. 6). The

FIG. 6.

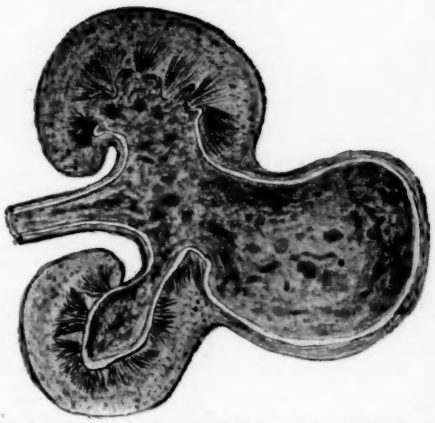


Fig. 6 shows a section of the left kidney. The pelvis and the middle third of the organ are occupied by a large tuberculous pyonephrosis and a large sac protrudes considerably beyond the outer border. The upper and lower thirds of the kidney are not much involved in the disease. (Royal Infirmary Museum, Series VII., No. M 19.)

right kidney was simply a multilocular cyst of about the size of a normal kidney. There was no vestige of renal tissue left and the loculi contained soft, white caseous material (Fig. 7). A careful examination was made of the ureters and the bladder and they were found to be free from disease. A caseous mass was found over the front of the sacrum and there was caries of both sacro-iliac synchondroses.

Judging from the morbid appearances and the history of the case it is evident that the right kidney was destroyed at a very early date without causing the patient much suffering. She could not remember having had aching in the right renal region, although on the left side she had during a period of 15 years more or less intense pain, sometimes amounting to anguish. At the same time there must have been a very sudden and complete blocking of the right ureter, as there was no evidence of the kidney being distended or of the infection having spread downwards. Coincident with or following the destructive process in the right kidney the left kidney underwent a compensatory hypertrophy, but at a later period infected matter must have been conveyed to it

FIG. 7.

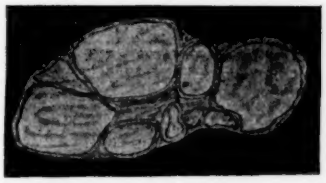


Fig. 7.—The whole kidney has been destroyed; the capsule and a few fibrous septa alone remain to represent the organ which has been replaced by caseous masses. (Royal Infirmary Museum, Series VII., No. M 20.)

by the blood, probably in the form of a tuberculous embolism. The tuberculous disease in the left kidney was not very destructive although of old standing.

(To be continued.)

EPISTAXIS FROM THE ETHMOIDAL VEINS.

BY A. BROWN KELLY, B.Sc., M.B. GLASG.,

SURGEON FOR DISEASES OF THE THROAT, NOSE, AND EAR TO THE VICTORIA INFIRMARY, GLASGOW.

IT is generally admitted that spontaneous epistaxis usually originates from the lower and anterior part of the cartilaginous septum. Hæmorrhages from this source, however, are rarely so profuse as to be dangerous, and they give trouble rather on account of their recurrence. In another variety of bleeding from the nose—viz., that observed in certain constitutional diseases, as in hæmophilia and purpura—the blood escapes from numerous points of the mucous membrane. In a third class may be placed the hæmorrhages coming from neither of the sources mentioned. The site of the bleeding in these cases, owing to the fast-flowing stream, as a rule remains undiscovered; this has been traced, however, to the inferior turbinate, to veins in the posterior part of the nose by Schmidt,[1] and to an artery on the floor anteriorly by Rosenberg.[2] Several cases of epistaxis have come under my notice in which the blood descended from the upper and anterior part of the nasal cavity. The anatomical relations of the vessels in this situation lead me to believe that they are not infrequently the source of severe hæmorrhage. The following cases—for permission to publish which my thanks are due to Mr. R. H. Parry, Dr. A. Napier, and Dr. E. Duncan—are reported with the object of directing attention to this hitherto unrecognised origin.

CASE 1.—A man, aged 34 years, was awakened one morning by bleeding from the left nostril which continued for a quarter of an hour. In the evening it set in again, lasted two hours, and was followed by recurrence at short intervals throughout the night. Various measures of relief were adopted by the three medical men summoned, but with only temporary benefit. On the next afternoon there was again epistaxis for two hours, after which he was admitted in a weak condition to Mr. R. H. Parry's ward in the Victoria Infirmary, Glasgow. A little later, in consequence of a further loss of blood, the patient became unconscious. During the next three weeks he had frequent epistaxis, which was always promptly checked by plugging. I examined him during one attack and found the blood coming from above the middle turbinate, but owing to the profuse flow the exact seat of origin could not be determined. In order to reach this, on a subsequent occasion part of the middle turbinate was removed. I never happened, however,

[1] Die Krankheiten der oberen Luftwege, Zweite Auflage, S. 776.
[2] Heymann's Handbuch der Laryngologie und Rhinologie, Band III., S. 710.

to be present at another bleeding, although he tried to bring on an attack during my visits by running, standing on his head, &c. Since his dismissal from the infirmary, over three years ago, there has been no recurrence.

CASE 2.—A man, aged 28 years, lightly built, healthy, and with no hæmorrhagic tendency, first had epistaxis on stooping to pick up something from the floor. The blood dropped from the right nostril but soon ceased. Next forenoon, while walking through his office, the bleeding suddenly re-commenced and he lost several ounces. During the following week there was frequent epistaxis, 24 hours being the longest period of cessation. There were no premonitory symptoms before the onset or subsequent attacks, but he felt irritation at a spot which from his description appeared to be in the neighbourhood of the anterior end of the right middle turbinate. His medical attendant tried various local and constitutional remedies, but found plugging the only means of even partially checking the hæmorrhage. On the ninth day, when I saw the patient for the first time, he was very weak and could not sit up in bed unaided. On removing the plugs the only point that appeared to have bled lately was on the right side of the cartilaginous septum below. This region was packed, and I was leaving the room when the patient began to spit blood. In the rhinoscopic mirror the stream could now be traced to the right posterior naris. The anterior plug was removed and fresh gauze was packed around the middle turbinate. Three days later this was renewed. The exact situation of the bleeding point in this case was not discovered, but after the upper part of the nasal cavity had been twice packed no further hæmorrhage took place.

CASE 3.—A woman, aged 44 years (who was seen in Dr. Napier's ward), stated that she had had epistaxis for the first time in 1890. She then lost a large amount of blood from both sides of the nose and the resulting debility kept her in bed for several weeks. The next attack was in 1896 and from the left side. The flow was very profuse at intervals for about five days, during two of which she was unconscious. After recovering from this attack she was well and doing her household work until four months before admission to the hospital, when in consequence of oppressed breathing she had to take to her bed. The third attack, during which I saw her, occurred in October, 1899. Bleeding began from the right nostril while she was lying quietly in bed, and according to her own statement she lost about a pint. At night there was another large hæmorrhage, after which she was brought to the Victoria Infirmary, Glasgow. During the first four days of residence in the infirmary she had three bleedings, during which she lost respectively 10, five, and 20 ounces. While the last hæmorrhage was going on I examined her and found the stream descending in pulse-like waves over the anterior part of the septum on the right side; the source was above the middle turbinate and out of view. A strip of gauze packed between this body and the septum at once checked the flow. Two days later when the gauze was being changed a slight recurrence took place, but there has been none since. The patient had a ventricular systolic murmur and the second sound was accentuated, but there was no cardiac enlargement. Epistaxis was preceded by a feeling of heaviness in the right half of the head.

CASE 4.—A man, aged 46 years, was admitted to Dr. E. Duncan's ward in the Victoria Infirmary, Glasgow, on Nov. 3rd, 1899, on account of epistaxis. The bleeding had commenced nine days previously while he was washing his face. There were several recurrences, the loss of blood on each occasion averaging from two to three ounces. When I saw him on the day after admission, although the right side of the nose was plugged anteriorly and posteriorly, blood was oozing through the packing. This was removed and the clots were syringed out. The blood could then be seen flowing down the septum from above the anterior end of the right middle turbinate. A strip of gauze firmly packed in this situation stopped the bleeding. A fresh plug was inserted next day and removed two days later, and there has been no subsequent recurrence. The patient was plethoric, but examination of his heart, lungs, liver, and urine revealed nothing abnormal. Shortly after leaving the hospital, however, albuminuria set in.

In Case 1, Case 3, and Case 4 the bleeding occurred above the anterior end of the middle turbinate. In Case 2 the patient was too weak to sit up and the blood flowed backwards into the naso-pharynx and could not be traced to its source. It is probable, however, that in this patient also the bleeding point was above the middle turbinate, for a plug inserted here checked the hæmorrhage. In addition it was observed in Case 3 and Case 4 that the stream descended over the septum. It is evident, therefore, that the ruptured vessel was on the roof or on the septum above the anterior end of the middle turbinate. This situation corresponds with that of the anterior ethmoidal vessels. The circumstances under which the bleeding commenced in the cases above reported suggest venous engorgement rather than arterial pressure as the cause of rupture; for at the onset the first patient was asleep, the second was stooping, the third was lying quietly in bed, and the fourth was washing his face. The anatomical relations also seem to point to the veins as the source of the hæmorrhage.

Is there any reason why the anterior ethmoidal veins should be specially liable to bleed? Their position certainly does not explain the tendency. They are situated in the most secluded and best protected part of the nasal cavity, and the tissues covering the septum do not yield less support in this region than elsewhere. In size they are by no means the most important in the nose. Although the naso-palatine is larger and follows a longer and more exposed course over the septum bleeding evidently takes place from it very rarely. Natier,[3] however, reports a case of hæmorrhage from the naso-palatine artery. A feature, however, that distinguishes the anterior ethmoidal veins from the other veins of the nose is their close connexion with the intracranial circulation. Herein lies, in my opinion, the explanation of the profuse and prolonged epistaxis in the cases above reported. The ethmoidal veins anastomose with the veins of the dura mater and with the superior longitudinal sinus. Another and more important vein, which has been specially described by Zuckerkandl,[4] accompanies a branch of the anterior ethmoidal artery, passes through the cribriform plate into the cranial cavity, and either opens into the venous plexus of the olfactory tract or is directly connected with a larger vein at the orbital lobe. The chief trunk of this vein has also been seen opening into the superior longitudinal sinus. The fact that these veins can be injected from the longitudinal sinus proves the absence of valvular obstruction to a backward flow. This condition and the pressure in the sinus, which has been shown by Hill[5] to follow closely the general circulatory pressures, would allow of abundant hæmorrhage from the proximal end of a ruptured ethmoidal vein. The other emissary veins are usually so small in the adult as to preclude serious hæmorrhage, and comparisons cannot be drawn between them and the ethmoidal veins. In the young, however, they may be of importance. Thus, in removing a cerebellar tumour from a child Parry[6] opened a large vein which communicated with one of the sinuses in the skull and great loss of blood resulted.

The connexion between the nasal veins and the intracranial veins referred to has received little or no attention from anatomists with the exception of Zuckerkandl. It is not astonishing, therefore, that these veins have escaped the notice of the rhinologist and that in an extensive search through the literature of the subject I have found no allusion to them as a possible source of epistaxis. Nevertheless it is from these vessels or from some anastomosing with them that one would expect the bleeding which is followed by a sense of relief in the head.

Epistaxis from the region of the anterior ethmoidal vessels is easily checked by firmly packing between the septum and the anterior half of the middle turbinate a strip of gauze reaching to the roof of the nose or as near to it as possible. The parts below may be left free so that nasal respiration is unimpeded. This is a great advantage over the method generally recommended, of plugging anteriorly, or anteriorly and posteriorly, which causes almost intolerable discomfort to some patients. After the packing has been changed twice or thrice at intervals of a day, or, if it can be introduced without becoming saturated with blood, of two days, the tendency to bleed will usually have ceased and the treatment may be suspended.

Glasgow.

[3] Epistaxis Spontanées, La Parole No. 8, 1899.
[4] Normale und Pathologische Anatomie der Nasenhöhle, 1893, Band i., S. 134.
[5] The Physiology and Pathology of the Cerebral Circulation, 1896, p. 43.
[6] Glasgow Medical Journal, 1893, ii., p. 39.

CASE OF

MEASLES IN A PATIENT AGED 18 YEARS COMPLICATED WITH MENINGITIS AND SPINAL MYELITIS; RECOVERY.

BY E. F. ELIOT, F.R.C.S., L.R.C.P. EDIN., F.F.P.S. GLASG., &c.

DURING the last week of April, 1898, I was called upon to attend a finely grown, well-developed girl 18 years of age who had been exposed to the infection of measles, and, as was anticipated, she developed a rash on May 1st. Everything was perfectly normal and the rash was well developed over the face and the whole surface of the body. On the 4th (the fourth day of rash) I saw her at 11 A.M., and she was doing perfectly well and had had a good night. About 3 P.M. she became restless and commenced "to grind her teeth," which continued till 6 P.M. when she was suddenly seized with a convulsive attack, described by the nurse as "epileptiform in character." There was no clonic spasm and the limbs were rigid and without motion. Warm milk was swallowed whilst the patient was livid. The aperient medicine given on the night before had not operated; a glycerine enema was therefore given and whilst this was acting a second attack took place. During this attack the face became livid (purplish) and there were random movements of the arms and the legs. I saw her as she was recovering from this attack, which lasted for 10 minutes. She was evidently much shaken by it. The pulse was rapid and very feeble, and she was "muttering" and "grinding her teeth." The temperature was 101·2° F. I gave her two drachms of brandy and eight grains of bromide of potassium. She remained fairly quiet for about an hour and during this time she was seen by Dr. T. W. Trend. The pulse had improved and the patient was in a profuse perspiration. The heart sounds were normal but the breath sounds were somewhat harsh at the right apex. She understood what was said to her. At the end of an hour a third attack came on quite suddenly. This lasted for two minutes. It was epileptiform in character, the patient uttering a faint cry, her face and hands being livid and her whole body convulsed. After the acute stage had passed off she continued to move her arms and legs, to grind her teeth, and to mutter for about 20 minutes. Then a fourth attack came on, similar to the third, but only lasting for about a minute. After this attack there was very little random movement. Brandy and bromide and milk and soda-water were administered after each attack. During the third and fourth attacks she passed flatus and fæces unconsciously. For six hours after the fourth attack she steadily improved. Her voice was strong, she had twitchings of the mouth but no grinding of the teeth, and she was quite conscious. At 4 A.M. she was lifted out of bed and she passed a fair quantity of urine of a specific gravity of 1020 with no albumin. The reaction was acid. The temperature after the fourth attack was 103·2°, and at 4 A.M. it was 101·8°, the pulse being 98. I may add that the menstrual period was due on the 4th, but it appeared only slightly for a few hours on the 3rd. Her mother informed me that the period usually was six or seven days behind time.

My opinion at this time as to the cause of the convulsions was that they arose (1) from toxic poisoning from measles; (2) from cessation of the menstrual period; and (3) from the patient being in a somewhat neurotic condition.

On May 5th I saw the patient again with Dr. Trend. Her temperature was then 100·6° and the pulse was 98. She was awake and quite sensible and was breathing well. The heart sounds were good. She had been quiet and sleeping for short intervals. During the day the patient was very quiet and she took medicine and nourishment well. I prescribed bromide in an effervescing mixture and brandy, milk, and barley-water. On the 6th the patient was very restless up to 2 A.M., but afterwards she slept at intervals. She passed urine twice in the night and at 4 A.M. her bowels acted. At 7 A.M. she began to twitch her mouth and occasionally to grind her teeth, and at 8 A.M. I ordered a full dose of bromide. She was perfectly conscious, her mind was quite clear, and she answered questions readily. At 9 A.M. the temperature was 97·2° and the pulse was 80. There was a slight cough at times and her arms and legs twitched in her sleep, as did her mouth when she was awake. I saw her with Dr. Trend and we agreed that she was going on well. An enema was ordered. On the 7th we found that she had had a fairly good night and that there was nothing of importance to note. We prescribed three grains of subchloride of mercury. The pulse was low and depressed. She had a quiet night on the 8th and her condition was much the same. The percussion note was slightly dull over the right base at the back, but there were no râles or tubular breathing. The patient appeared to be progressing on the 9th, with no fresh symptoms. On the 10th she became very drowsy during the night and slept heavily. There was more dulness over each base at the back. The heart's action was feebler, but the sounds were clear. We did not consider her condition satisfactory, and Dr. Hughlings Jackson was asked to see the patient and he arrived at 6 P.M. The treatment at this time was as follows. The room was kept dark and cool. We ordered her position in bed to be changed and her shoulders to be more raised. Brandy, champagne, beef juice, and Benger's food were directed to be given, and subchloride of mercury and Rubinat water as necessary. A mustard plaster was applied to the nape of the neck and cold to the head. Salines, digitalis, bromide, ether, &c., were also ordered. Dr. Hughlings Jackson (May 10th) reported that this was a very uncommon and difficult case. The condition might have been due to "measles process" or to a simple meningitis from the first. The treatment was to "keep her going," and it was just possible, even if there was meningitis, for a recovery to take place. There was no pain or tenderness over the mastoid. Examination of the eyes.—After application of cocaine nothing abnormal was found in the discs; the pupils were equal and slowly reacted to light. A bright light did not seem to annoy the patient. Examination of the chest.—The respiration was markedly abdominal; a percussion note was clear all over the chest; there were some few râles over both bases behind; and the respirations were 30 a minute. The heart sounds were clear and normal. The pulse was good and steady (80 per minute). The abdominal viscera were apparently healthy. The specific gravity of the urine was 1025; there was no albumin and but little phosphates. There was absence of patellar reflexes and ankle clonus. None of the symptoms were considered to be due to any neurotic element.

On May 11th, since 6 P.M. on the previous evening the patient had been quiet and sleeping. There was no twitching. The urine and the fæces were passing involuntarily. At times the patient roused up and answered questions. The rigidity of the muscles of the neck was more marked, but the general symptoms were much the same. At 5 P.M. I saw the patient in consultation with Dr. Mitchell Bruce, who gave his opinion that there was nothing functional in the case, and that it was probably a local, non-purulent, inflammatory meningitis, plus spinal myelitis, and that the question of thrombosis of the longitudinal sinus ought to be kept in mind. He thought that the condition was a most rare and grave one, but that there was a possibility of recovery. The treatment adopted now was as follows. The room was directed to be kept cool and dark, the head and shoulders of the patient to be raised, and the position of the body to be changed from side to side. Eight minims of tincture of nux vomica every four hours and three grains of subchloride of mercury every second or third day were ordered, with brandy, champagne, and beef-tea. Mustard plasters to the nape of the neck from time to time were also ordered.

On May 12th the patient had had a good night. During the night there had been two marked periods of consciousness, the patient talking quite rationally. At noon the temperature began to go up and during the afternoon she was evidently not so well. The temperature continued to rise and the pulse became very rapid and weak. Drowsiness was increasing and there was difficulty in swallowing. At 9 P.M. she was much worse. Her temperature was 103·2°, her pulse was 150, and she was breathing very badly. I ordered ice to be applied to her head and her hair to be cut off. Digitalis and ether mixture, a nutrient and stimulant enema, and general sponging with mustard were also ordered. This treatment was continued through the night of the 13th. The patient two or three times became almost pulseless, but about 7 A.M. she rallied. The temperature was 101° and the pulse was 120. She recognised her

father. The ice, digitalis, and ether were continued. At 12 noon the patient had another very bad attack and a fatal result was expected, the temperature rising; but during the afternoon and evening she rallied and had several slightly lucid intervals. On the 14th she had had a much better night with fairly quiet sleep and nourishment was taken. The pupils slightly responded to light, which they had failed to do on the night of the 11th. During the last three days I had noticed that the temperature went up before the bowels acted and came down after the bowels had been relieved. During the next two days her condition was much the same. The attacks of coma were not so severe, and she took nourishment well. On the 17th her condition was much the same. The bowels were kept acting freely. The patient could talk and answer questions in a whisper. The limbs were absolutely rigid and the toes were extended. The patient now complained of pain in both legs. The legs were gently rubbed for the first time. There were no patellar reflexes or ankle clonus. She was able to move her arms a little better, and the muscles of the neck were a little less rigid. She could also move her head a little. The pupils responded sluggishly to light. The muscles of the lower limbs had only wasted a little, and there was no marked emaciation. On the 18th the patient had had a good night. The temperature varied from 100° to 100·6° and the pulse from 100 to 110. The plantar reflexes were slightly present and she could just move her toes. The pupil reflexes were not so good. The general condition was much the same. On the 19th the general condition was not so good, the patient seeming to be generally weaker. The symptoms were the same as on the previous day. At the middle of the day I decided to give her iodide of potassium and solution of perchloride of mercury, alternating with quinine, iron, and digitalis. During the day the patient was very drowsy. The temperature rose to 102° and the pulse became very rapid. Some cough developed during the day. The quantity of nourishment was increased. At 9 P.M. her condition was bad and I had her spine packed in ice. After ice had been applied she gradually improved and had had a fairly good night on the 20th. She complained during the night of pain in both legs. Ice was constantly applied and her temperature at 7 A.M. was 97·2°, the pulse being 80 and respiration good. At 7.30 A.M. the ice was removed from the spine. During the night the patient had expressed a desire to have the bowels opened, and at 12 noon they acted. At 5.15 P.M. she passed urine consciously, and at 6.30 P.M. the bowels acted well. During the day ice was applied at intervals to the lumbar spine.

On May 21st the patient passed a fairly good night. The nurse informed me that she had been more conscious on passing fæces but had taken no notice on passing urine. At 11.30 P.M. she asked for the bed-pan and used it, but urine passed involuntarily all day. On the next day there was no change, but at 8 P.M. the temperature rose to 101°; ice was immediately applied to the back. Her condition on the 23rd was much the same. She had not had a good night, but when she was washed in the morning she was able to bend her knees very slightly. It was noticed that during the previous three or four days the patient had decidedly lost flesh. During the night and the day she had a troublesome cough. The temperature was 100°. There was no material change in her state on the next day. On the 25th she had passed a good night and could move her right leg slightly, but not the left. Her intellect seemed clearer. She passed a good night on the 26th taking nourishment freely. Her legs were rubbed twice a day. I saw Dr. Mitchell Bruce in London and discussed the case with him; we were of opinion that it was now one of myelitis of the dorsal region of the cord. It was, therefore, decided to increase the iodide and the solution of perchloride of mercury and to continue the massage. On the 27th more movement in the lower limbs was noted. It was very slow but there was no pain. For the next three days the patient generally improved. On the 31st she commenced taking solid food. On June 1st slight patellar reflexes were found to be present for the first time, and there was more power generally. The next day the improvement was marked and the sensation in the limbs was normal. The patient's condition had slowly improved on the 6th. The patellar reflexes were more marked. On the 11th she had a sleepless night and was moved into another room. On the 28th she was found to have steadily improved; she could walk from room to room and upstairs and downstairs. All medicine was stopped except one drachm of syrup of iodide of iron. The menstrual period came on on the 22nd. The patient's sight was distinctly affected, there being short sight for all small objects, also red to green colour-blindness. Most greens looked at first—i.e., two weeks previously, when this condition was first noticed—orange; they now looked greener. Red and purples appeared as sage-green, green, or shades of mauve. She went out for a drive and she had been in the garden for the last 10 days. On Sept. 1st I learned that she had been away to the seaside. The patient was now perfectly well in every respect.

This case appears to me to be one of peculiar interest, as although spinal cord lesions occurring in the exanthus stage of measles are recorded they are nevertheless somewhat rare, and in a number of cases they have proved rapidly fatal. A case is recorded by Barlow[1] which presented a somewhat similar train of symptoms. In Barlow's case death occurred on the eleventh day. A detailed account of the post-mortem and microscopical appearances of the spinal cord are given at length and are most interesting. In my own case I would suggest that the changes in the cord were vascular in character and of greatest intensity in the dorsal region. Probably the vessels were surrounded by a zone of coagulated exudation and the neighbouring tissues were infiltrated with leucocytes. It is impossible to say whether there were any interstitial hæmorrhages. I think there can be no doubt that the bladder symptoms, the paralysis of the lower limbs, the degree of paresis which existed in the upper limbs, and the absence of knee-jerks and of plantar reflexes, were all spinal symptoms.

The question is, What was the relation between the myelitis and the measles? This patient was absolutely well before she sickened for measles. She contracted measles from a relative (who sat next to her at lunch and who developed a profuse rash on the next day). The incubation period was normal and a few days afterwards she had symptoms of meningitis, followed by symptoms of myelitis. I think that there are a sufficient number of cases on record to show that there is a distinct relation between measles and a form of myelitis which may be produced by the virus concerned in the other phenomena of measles.

I am very glad that I was able to have the opinions of Dr. Hughlings Jackson and Dr. Mitchell Bruce. At the time when they saw the case it was impossible to form any other opinion than that death must very shortly take place. The result of this case teaches us how in an apparently obviously hopeless condition a victory may be gained. Except for the incessant watching on the part of the nurses the patient would have died. On several occasions the pulse was uncountable and scarcely perceptible and I hardly thought that death could be warded off. It was interesting to note the comparatively rapid recovery, and I am sure that the iodide of potassium and solution of perchloride of mercury were of great use.

I have published this case as it may be of interest to practitioners, and it is comforting to know how absolutely complete recovery can occur in cases of this sort. I am greatly indebted to my partner, Mr. R. F. Chance, for his valuable aid and assistance during this very trying case.

Southampton.

AN ANOMALOUS CASE OF CONTINUED FEVER WITH ABSCESSES OF THE LIVER.

BY J. G. McNAUGHT, M.A., M.D. GLASG.,
CAPTAIN, ROYAL ARMY MEDICAL CORPS.

THE following case may be of interest in connexion with that reported in THE LANCET of July 30th, 1898 (page 252), by Dr. Sidney Herbert Snell.

A gunner in the Royal Artillery, aged 24 years, was admitted to the special wards of the Station Hospital, Quetta, on Jan. 9th, 1898. For some time he had been suffering from intermittent fever, apparently of malarial origin. For two days at least before admission fever had been continuous. His temperature on admission was 102·6° F. His face was flushed and his tongue was slightly furred. There was no abdominal distension or pain; he

[1] Transactions of the Royal Medical and Chirurgical Society, vol. lii., p. 77.

had three or four loose motions daily. The spleen was slightly enlarged; the heart and lungs appeared to be normal. On Jan. 12th his temperature was 100·4° in the morning and 105° in the evening; on the 13th it was 100·4° in the morning and 101·6° in the evening. On the 14th he complained of severe pain in the right side aggravated by movement and by taking a deep breath. A friction rub was heard at the inferior angle of the right scapula on auscultation. There was no dulness on percussing the base of the lung. The lower border of the liver was tender on palpation. On the previous day he had had six loose, light yellow motions. On this date he passed about one ounce of bright blood from the bowel. The tongue was dry and brown in the centre. His blood gave incomplete reaction to Widal's test; distinct clumping occurred, but many bacilli remained actively motile at the end of half an hour. His temperature was 101·2° in the morning and 100° in the evening. On the 15th he seemed much better; the pain in the side was relieved, there was no diarrhœa, and the tongue was cleaner and moist. His temperature was 102·2° in the morning and 103·8° in the evening. On the 16th there was a second hæmorrhage from the bowel, about five ounces of bright blood being passed. There was still pain in the right side on coughing, the respiratory murmur was very feeble, and the percussion note over the extreme base posteriorly was dull. The facies was now very suggestive of enteric fever, the tongue was brown and dry in the centre, and red at the tip and edges. The abdomen was somewhat distended. There were no rose spots. The blood gave a marked but incomplete reaction to Widal's test. The blood was examined for malarial parasites, but only one degenerated pigmented spherical body was found. His temperature was 100° in the morning and 102° in the evening. On the 17th he was restless and had passed a bad night. His temperature was 101·6° in the morning and 103° in the evening. His pulse was 140 and his respirations were 48 per minute. His pulse was very weak; his tongue was brown in the centre, furred at the sides, and red at the tip and edges; his abdomen was more distended and there were no rose spots; a small motion was passed containing some dark altered blood and some bright blood. On the 18th his condition improved; his temperature was 100·4° in the morning and 104·6° in the evening. On the 19th he complained of abdominal pain and was perceptibly weaker; one motion was passed containing altered blood; his temperature was 100° in the morning and 102·6° in the evening. On the 20th his condition was somewhat better. He passed two fluid, light yellow motions without any blood in either. The lung condition remained unchanged. His temperature was 100° in the morning and 103° in the evening. On the 21st the blood was again subjected to Widal's test and gave an incomplete reaction. His temperature was 99·6° in the morning and 102·8° in the evening. On the 22nd his temperature was 99·4° in the morning and 101·6° in the evening. He continued to do fairly well till the 23rd when he became very restless and had two large hæmorrhages from the bowel. A swelling was noticed in the epigastrium; it was dull to percussion and no fluctuation was detected. The urine contained bile pigment. In the evening he had two large hæmorrhages and became collapsed; the pulse was fluttering and very weak and the extremities were cold, but he rallied under treatment. His temperature was 98·4° in the morning and 100° in the evening. On the 24th he had a number of hæmorrhages from the bowel and became again collapsed, but rallied under treatment by opium and champagne. His temperature was 97° in the morning and 96·4° in the evening. On the 25th he passed a large number of small "tarry" motions involuntarily; the pulse became imperceptible and the respirations shallow and sighing, and he died quietly about 10 A.M. His temperature that morning was 96°.

Necropsy.—The right lung weighed 16 ounces; its substance was very anæmic. It was adherent at the base to the chest wall and diaphragm. A small portion of the base was consolidated, dark-red in colour, and leathery in consistence. The left lung weighed nine ounces and was very anæmic; it was slightly adherent at the base. The heart weighed 10 ounces; the walls of the right ventricle were thin, pale, and extensively infiltrated with fat. The liver was much enlarged, especially the left lobe, and weighed 84 ounces. It contained five abscesses, three in the right lobe and two in the left. Two of the abscesses were as large as turkey's eggs; the others were smaller. One of the abscess cavities contained bile, the others contained thin yellow pus. The liver was adherent to the diaphragm. The spleen weighed eight ounces. The kidneys were very anæmic. The stomach and small intestine showed no abnormal appearances. Close to the ileo-cæcal valve and on it were a number of irregularly shaped ulcers, some of which were two-thirds of an inch long and others smaller. The mucous membrane of the two feet of the large intestine next the valve was congested and contained numerous ulcers, the largest being nearest the valve. Beyond a distance of six inches from the valve the ulcers were small, circular, and punched out in appearance. The mucous membrane of the remainder of the large intestine and rectum was quite healthy. There was no thickening of the walls of the bowel at any point. The mesenteric glands were swollen and soft.

The spleen was incised with a sterile knife and three tubes of Parietti's broth were inoculated from it. In all three tubes there grew a bacillus and a coccus, the bacteriological examination of which gave the following results. (*a*) The bacillus in Parietti broth produced a slight turbidity in 48 hours and a marked turbidity in 72 hours (at 90° F.). In broth it produced turbidity in 24 hours; after a week's incubation at 90° F. a pellicle formed. In gelatin-stab cultures there was a growth visible in 48 hours; there was a greyish-white slow growth on the surface and a beaded growth in the substance of the gelatin. In gelatin-streak cultures there was growth visible in 48 hours—slow growth, bluish white, irregular edges; there was no liquefaction. In glucose-gelatin shake culture there was turbidity in 24 hours, with slight gas formation in from three to eight days. Sterilised milk did not coagulate in 10 days. On potato there was moist transparent growth in 24 hours (at 90° F.); in a week the growth became thick and greyish. Agar streak culture gave a thick creamy-white growth. Gelatin plate culture gave a slow growth in 72 hours; the colonies were granular and dark in the centre; there was no liquefaction. The microscopic characters of the organism were as follows: a short, thick, sluggishly motile bacillus with rounded ends. Stained by dilute carbol-fuchsin some bacilli showed slightly stained central portions and deeply stained ends. Long thread-like forms were also seen. (*b*) The coccus appeared to be streptococcus pyogenes from its cultivation characters.

The clinical characters of the case were at first puzzling, but latterly they were quite consistent with a diagnosis of enteric fever. Neither the clinical history nor the post-mortem appearance supported a diagnosis of dysentery. I inspected the motions regularly and they never presented any dysenteric characters. The bacillus isolated from the spleen resembled bacillus coli in most of its characters, but it did not coagulate milk, it only produced gas after from three to eight days' growth in glucose-gelatin, and at first the growth on potato resembled that of bacillus typhosus.

TWO CASES OF PULSUS PARADOXUS.

BY JOHN HAY, M.B. VICT.,
ASSISTANT MEDICAL OFFICER, MILL-ROAD INFIRMARY, LIVERPOOL.

UNDER certain conditions the pulse becomes distinctly smaller during inspiration or completely disappears and this form of pulse is named the "pulsus paradoxus." It is not of common occurrence, though probably not so rare as is usually supposed, often being looked upon simply as an irregularity of the pulse whilst the rhythmical character of the irregularity is not perceived. This condition is usually bilateral but is occasionally not so, an interesting case of this nature being recorded by Dr. Thomas Harris of Manchester in THE LANCET of April 22nd, 1899, p. 1072.

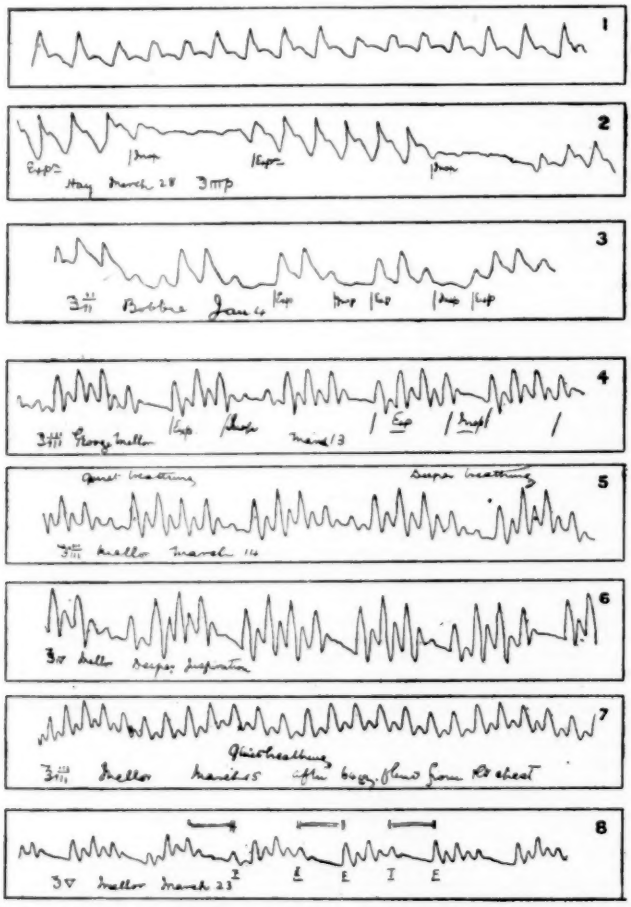
As to the value of the sign, opinions differ greatly, but I think that we may take it that pulsus paradoxus is not *of itself* pathognomonic of any condition, though it cannot be denied that it does exist in perhaps its most marked form in certain cases of indurative anterior mediastino-pericarditis; but there are other conditions in which it is sometimes present, such as pericarditis with effusion uncomplicated by mediastinitis, also in pleuritic effusion and in patients suffering from great inspiratory dyspnœa.

The following two cases illustrate to some extent (1) these three conditions as causative agents; (2) the relief

afforded by thoracenteses in cases due to pleural effusion; (3) the association of the pulsus paradoxus with a pulse of low tension, as pointed out by Sir William Broadbent, who drew attention to, and emphasised the fact that, the *high tension* pulse hardly reacts to variations "which produce extraordinary perturbation in the *low tension* pulse"; and (4) the possible short duration of the paradoxical pulse. This is probably due to the fact of its dependence on low arterial blood-pressure—if from some cause the blood-pressure falls in a certain case the pulse becomes paradoxical. Stimulate the heart, contract the peripheral arterioles, and the pulse becomes normal in its rhythm with the increase in arterial tension. This was exemplified recently in a case necessitating venesection on account of great cyanosis due to labouring right heart, the cause being emphysema complicated by an attack of bronchitis. As the arterial tension was good and the pulse (radial) fairly strong, showing that the left ventricle was in good working condition, venesection was performed. Some 22 ounces of blood were drawn off before the man experienced relief. The radial pulse was then soft and regular in time and force and exhibited a rhythmical variation with respiration becoming hardly perceptible during inspiration. As the arterial tension increased again the pulse resumed its normal characteristics, the pulsus paradoxus only having been observed for a period of 20 minutes.

CASE 1.—The patient, a male child, aged three years, when in perfect health was attacked by acute bronchitis. This was accompanied by slight rise of temperature, rapid respiration and pulse, the inspiration being short and catchy and the expiration being more prolonged and wheezy. His pulse though frequent remained regular in time and force and of fair tension. One evening I noticed that the pulse was much softer and that during inspiration it could not be felt. I then took some pulse tracings, one of which is reproduced and which shows the relationship between the pulse and respiration (*vide* No. 3). On the next morning the pulse was again normal, being perfectly regular in time and force and not varying with respiration. The important point is that the tension was good. It was no longer a soft pulse. The respirations were somewhat less rapid, but were not markedly different from the condition of the previous evening. The convalescence was

PULSE TRACINGS TO ILLUSTRATE THE CASES.



1. From normal adult, showing the effect of deep respiration. During inspiration the radial pulsation becomes more frequent and the percussion wave not so forcible. Pressure two ounces.
2. From normal adult, showing the effect of deep inspiratory efforts with closed glottis. Pressure three and a half ounces.
3. Tracing illustrating Case 1. Transient pulse condition caused by marked dyspnœa associated with temporary low arterial tension. Pressure two ounces.
4. Tracing illustrating Case 2, March 13th. Quiet breathing. Pressure three ounces.
5. Case 2, March 14th. Quiet breathing, but somewhat deeper than 4. Pressure three ounces.
6. Case 2, March 14th. Deeper breathing. Pressure four ounces.
7. Case 2, March 15th. Quiet breathing. Shows the effect of the withdrawal of 63 ounces of fluid from the right pleural cavity. Pressure three ounces.
8. Case 2, March 23rd. Pulsus paradoxus returned. No corresponding accumulation of fluid in the right pleural cavity. Pressure five ounces.

rapid and uninterrupted, there being no repetition of the abnormal pulse condition.

Here I think the dyspnœa was the active cause, but so long as the arterial tension remained fairly good no paradoxical pulse showed itself; however, on the occasion of the tension dropping and the pulse becoming soft, then the dyspnœa was able to produce a definite effect, the result being the pulsus paradoxus.

CASE 2.—A man, aged 40 years, was admitted into hospital on Feb. 8th, 1899, suffering from broncho-pneumonia complicated by pericarditis with effusion. He had been ill for four days previously to admission. His condition was critical and he had an irregular temperature ranging between 99° and 104° F. The pulse-rate was 130 and the respirations were from 40 to 60 per minute. Under treatment he improved considerably up to Feb. 21st. From that date he slowly began to lose ground, his most prominent symptoms being marked restlessness, a very troublesome cough, considerable dyspnœa, and inability to sleep in the recumbent posture; towards the end he became delirious. His temperature remained a little above normal, the dyspnœa increased, and he died suddenly on March 26th. The definite improvement in the general condition up to Feb. 21st was associated with the gradual clearing up in the lungs. Following this, however, the pericardial condition and the cardiac changes accompanying it became the main factors in the case and were the direct cause of death. On March 13th I made the following note: "The patient is still suffering greatly from dyspnœa, cannot lie down, and is occasionally attacked by great difficulty of breathing, the number of respirations increasing to 70 per minute. During these attacks he becomes almost frantic. They are not associated with marked cyanosis. The præcordial dulness is increased in area, extending two inches to the right and five and three-quarter inches to the left of the middle line, together making a transverse dulness of seven and three-quarter inches. There is dulness in the first left interspace extending one and three-quarter inches from the middle line. No friction rub is to be felt on placing the hand over the præcordium, and only an indefinite cardiac pulsation. The apex beat cannot be seen or felt, and the heart sounds are practically inaudible. There is occasionally a short systolic murmur in the fourth and fifth spaces. There are râles to be heard in the chest, more particularly over the lower lobes, and a pleural friction rub over the right middle and lower lobes. There are definite signs of fluid at the right base, the dulness reaching as high as the ninth spine. The liver is eight and a quarter inches in nipple line and is enlarged and tender. The spleen measures four inches in long diameter. The veins of the neck and arms are tense and engorged, but there is no definite cyanosis." The left pupil was dilated and larger than the right, a condition which I have noticed in several cases of acute pericarditis with effusion. His radial pulse was soft, frequent, and varied rhythmically with the respiration.

Tracings Nos. 4, 5, 6, and 8 in the diagram show well the "pulsus paradoxus." They were, with the exception of No. 6, taken with the patient breathing quietly. During the time that No. 6 was taken the patient was asked to breath more deeply. The five tracings all show a condition of low arterial tension, Nos. 4, 5, and 6 being distinctly hyperdicrotic. It is noticeable that where the paradoxical condition is most marked, as in No. 6, there the pulse is most hyperdicrotic.

On March 15th 63 ounces of clear fluid were withdrawn from the right pleural cavity. This was followed by considerable improvement in breathing and the patient passed a comfortable night. Pulse tracing No. 7 was taken on the evening of March 15th following the thoracentesis and shows a definite improvement. There is certainly a distinct respiratory curve but otherwise the tracing might pass for that of a normal pulse of low tension.

The above alteration in the pulse was undoubtedly brought about by the removal of the fluid from the chest and although the fluid did not re-accumulate, so far as can be judged by physical signs, the paradoxical condition of the pulse returned as markedly as ever.

Tracing No. 8 was taken on March 23rd, three days before the man's death; he was breathing quietly, though rapidly. The above tracings are all from the right radial artery; others were taken from the left radial artery presenting the same condition. It was impossible to obtain any tracings from the anterior tibial artery on account of the œdema about the ankles and feet. Unfortunately no necropsy was permitted.

I would like here to express my indebtedness to Dr. Nathan Raw, as it is through his kindness that I am able to publish these cases.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

HEMIATROPHY OF THE TONGUE.

BY L. A. PARRY, M.D., B.S. LOND., F.R.C.S. ENG.,
LATE HONORARY ANÆSTHETIST, NORTH-WEST LONDON HOSPITAL.

THE following case is of interest not so much because of the condition of the tongue as on account of the unusual cause to which it was due.

The patient, a man, aged about 50 years, complained that one side of his tongue was growing smaller. He had no other trouble whatever, but he could not quite understand why this should be, and so he had sought medical advice. The condition present was simply atrophy of one side of the tongue. The only point in his personal history bearing on the case was that some years previously he had had a serious injury to his head, resulting in fracture of the base of the skull. Now, the causes of an unilateral atrophy of the tongue are disease of the hypoglossal nucleus or disease of the same nerve. Supranuclear disease is not accompanied by wasting, or, at any rate, only to the slightest extent. Facial hemiatrophy is sometimes accompanied by hemiatrophy of the tongue, but here this need not be discussed, for there was no hemiatrophy of the face. Nuclear disease is almost always bilateral and is generally accompanied by disease of adjacent nuclei, giving rise to labial paralysis. But every now and then in chronic degenerations, such as locomotor ataxia or progressive paralysis, of the insane, this affection is unilateral. Here, too, other nuclei are generally affected and other symptoms characteristic of the disease (tabes or progressive paralysis) are present. If the lesion is below the nucleus it may be (1) within the medulla, and then there is paralysis of the leg and arm of the other side; or (2) outside the medulla, then the nerve may be damaged within the skull by meningitis or new growths, or outside the skull by wounds, cellulitis, tumours, neuritis, or caries of the highest cervical vertebræ. There are no symptoms in this case of tumours, meningitis, caries, and so on, and I think this hemiatrophy is due to injury of the nerve in its passage through the anterior condyloid foramen at the time of the fracture of the base of the skull.

Hove, Sussex.

OCULAR PHENOMENA ASSOCIATED WITH CHEYNE-STOKES RESPIRATION.

BY G. YOUNG EALES, M.R.C.S. ENG., L.R.C.P. AND L.M. EDIN.,
LATE ASSISTANT DEMONSTRATOR OF ANATOMY, ST. GEORGE'S HOSPITAL, S.W.

THE following case is, I think, worthy of record inasmuch as the ocular phenomena observed, so far as I have been able to ascertain, have not hitherto been placed on record.

A man, aged 61 years, short, dark, and thick-set, came under my observation two and a half years ago, when I found him to be suffering from a mitral systolic murmur, considerable hypertrophy of the left ventricle, and some amount of albuminuria. Dilatation of the ventricle gradually ensued and this was followed by pulmonary and hepatic congestion, increase of the albuminuria, and, finally, general anasarca, so that it may be said that the patient was more or less waterlogged for the last two years of his life. Eight weeks before his death uræmic convulsions set in and continued off and on down to ten days before the end, when he became suddenly hemiplegic, after which the convulsions ceased. The patient was now paralysed on the left side and had in addition loss of control over the sphincters. Three days before his death

coma accompanied by marked Cheyne-Stokes respiration supervened, which continued till his decease. I noticed that each cycle of this type of breathing averaged about a minute in duration, the intervals varying from 12 to 15 seconds and the respirations being from 28 to 33 in number. On examining the eyes I noticed that during the interval both pupils remained stationary and somewhat contracted. After the onset of the first four or five respirations each pupil began to dilate, and as the respirations increased in volume and rapidity they each became more and more dilated until finally they became widely dilated and remained stationary during the height of the cycle. As the respirations subsided during the decline of the cycle each pupil gradually contracted more and more until eventually, just before the respirations ceased, they became contracted somewhat and remained stationary till the onset of the next cycle.

I do not know that these ocular phenomena can be said to be a sign of diagnostic value of the disease under consideration; nevertheless, I deem it worthy to be placed on record, partly because it is an interesting piece of clinical evidence and may afford others the opportunity of being on the lookout for similar rhythmical pupil changes in cases of Cheyne-Stokes respiration, and partly because the whole phenomena of Cheyne-Stokes breathing is involved in obscurity. Many theories have been advanced to account for it, but none of them are quite satisfactory. Therefore, any side-light brought to bear upon the subject may possibly be of interest to those scientists who are interested in this matter. Sir W. Gowers, in his work on "Diseases of the Nervous System," says that the pupils may contract during the interval in Cheyne-Stokes respiration, but he is silent concerning any rhythmical action of the iris coincident with the rhythmical respiratory act such as I have stated above. Gowers, too, in speaking of Cheyne-Stokes breathing says that the respirations in each cycle never exceed 30 in number. In the case quoted above I frequently counted as many as 33 respirations.

Torquay.

LARGE DOSES OF CARBOLIC ACID IN EQUINE TETANUS.

BY FRANCIS EVELYN PLACE, B.Sc., M.R.C.V.S.

DR. J. MITFORD ATKINSON'S case of bubonic plague[1] is of much interest, and as during the last two years I have been treating tetanus in horses by means of hypodermic injections of carbolic acid I send a few notes which may form an appendix to that case. The mode of procedure is to inject in the neighbourhood of the neck and shoulders one drachm of carbolic acid (British Pharmacopœia) every two hours for the first 32 hours of treatment and less frequently as occasion may arise afterwards. The result is that within an hour there is a large swelling at the seat of injection which gradually subsides during convalescence, and there is no trace of it left after 14 days in the case of those injections made during the virulence of the disease. Sometimes, however, in the case of the injections made during the subsidence of the disease there is a loss of hair. This occasionally persists for weeks, but in no case have I found it to be permanent. The largest amount used in a single case has been 36 fluid drachms in 84 hours, the patient being an Arab horse, 14 years old, which recovered and resumed work on the twenty-second day after the attack. I have never administered less than 16 drachms in a successful case and as in two cases I have seen horses die after the administration by the mouth of half an ounce of diluted carbolic acid given for pneumonia I can only conclude that in tetanus there is a specific tolerance of the acid and, judging from Dr. Atkinson's case, that the same seems to be the case in plague. Details of some of the cases I have treated may be found in the Transactions of the Bombay Medical Society for 1898, having been reported by the courtesy of Colonel W. G. Henderson, R.A.M.C., who has successfully adopted the treatment in human practice in relatively large doses.

Bombay.

[1] THE LANCET, Dec. 9th, 1899, p. 1562.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

SHEFFIELD ROYAL INFIRMARY.

A CASE OF TRAUMATIC TETANUS WITH RECOVERY.

(Under the care of Dr. W. DYSON.)

THE following case is a very good instance of a somewhat severe attack of tetanus ending in recovery. The long incubation period of 12 days was in itself of fairly good prognosis, for the chance of recovery increases with the length of time that elapses before symptoms appear. No antitoxin was injected, so we must attribute the satisfactory result to the excision of the wound and the administration of the bromide and chloral. The symptoms were so characteristic that we need have little hesitation in admitting the accuracy of the diagnosis, even though no tetanus bacilli were found. For the notes of the case we are indebted to Dr. Noel D. Bardswell, house physician.

A girl, aged 15 years, was admitted into the Sheffield Royal Infirmary on July 26th. There was a history of a cut on the right hand 17 days before admission and of its contamination with garden mould. The tetanic symptoms commenced somewhat insidiously 12 days after the accident with severe pain in the back, stiffness of the muscles of the neck and throat (causing dysphagia), spasmodic contraction of the jaws on attempting to eat or speak, and stiffness of the fingers and hand of the injured limb. During the next few days these symptoms increased in severity and she was then sent to the infirmary.

On admission all the muscles of the neck were in a condition of tonic spasm, the head being slightly retracted. The face was anxious-looking, the angles of the mouth were drawn downwards and outwards, and the pupils were widely dilated. Spasmodic closure of the jaws occurred incessantly, frequently biting the tongue, which was furred and much excoriated at its edges by the teeth. There was a slight degree of opisthotonos; the abdomen was unaffected. The legs were extended and stiff to move and all the muscles of the right arm, forearm, and hand were in a condition of tonic spasm, the fingers being firmly clenched and the arm flexed. On the right thenar eminence was a nearly healed healthy-looking cicatrix about an inch long. The paroxysms of spasm, which the least irritant would excite, occurred several times a minute, except for brief intervals, during which the patient dosed. During the paroxysm the distortion of the face became more pronounced, presenting a typical risus sardonicus; the jaws were tightly closed; the back was arched; the legs became rigid and slightly over-extended with the heels drawn up; and the contracture of the right arm and hand became more intense. The paroxysms were accompanied by great pain in the affected muscles and by profuse sweating. Respiration was unaffected, but the pulse was quickened during the paroxysms. The temperature on admission was 99° F.

The patient was kept in a darkened room; the cicatrix was freely excised, the removed tissue being kept for examination, and 20 grains of bromide of potassium and 10 grains of chloral were given every four hours. Under the influence of chloroform the spasm completely disappeared and the paroxysms were less severe for some hours following the administration. During the first week after admission she remained in much the same condition. There was slight irregular pyrexia, varying from 99° to 100°; the opisthotonos became more marked and tonic in character, and the muscles of the abdominal wall and left arm were contracted during the paroxysms, in addition to the muscles already mentioned. The constant biting of the tongue was the most distressing symptom and she kept a large piece of lint between her teeth day and night, which, she said, saved her tongue during the spasms. Sleep was greatly interfered with, difficulty was experienced in passing urine, which was reduced in quantity

and febrile in character, and there was very obstinate constipation which was overcome by repeated doses of compound mixture of senna. Swallowing became easier after admission and she took fluid nourishment well between the paroxysms. On the third day after admission there appeared a universally distributed scarlatiniform rash, which gradually faded in the course of a few days, by which time the patient was becoming very weak, and 10 grains of bromide of ammonium, 10 minims of compound spirit of ammonia, and 15 minims of spirit of chloroform were given every four hours in place of the first mixture. Ten days after admission the condition began slowly to improve. Sleep became less disturbed and the paroxysms gradually became less frequent and severe, the muscles affected last being the first to recover. Convalescence was slow but steady, and in three weeks it was complete except for some stiffness of the affected area following the prolonged contracture.

Bacteriological examination.—A bacteriological examination of the tissue excised was made by Dr. J. Robertson. The examination was commenced within an hour of the operation. The tissue was excised with aseptic precautions and received into sterile test tubes. Two pieces of tissue were received for examination—(*a*) a piece of fascia and (*b*) a piece of skin. In both instances the tissue was scraped in sterile water and teased; the water was then kept at 80° C. for 15 minutes, as recommended by Kitasato and a portion was added to glucose-agar and plate cultivations were made. These were incubated at 20° C. in an atmosphere of hydrogen. Several other media were inoculated and incubated at from 30° C. to 37° C. in Buchner tubes. The organisms were carefully examined and in many instances were subcultured. No bacillus tetanus was found, most of the organisms being facultative anaerobes. One diplococcus was of interest on account of the very extreme variations in size of the different cocci, some being from four to six times the diameter of others. Unfortunately, there was no opportunity of making any animal experiment.

LEEDS GENERAL INFIRMARY.

A CASE OF RUPTURE OF THE FEMORAL ARTERY.

(Under the care of Mr. W. H. BROWN.)

WHEN the trunk of the common femoral artery gives way either as a result of injury or from disease, gangrene of the leg is almost certain to follow unless the torn ends of the vessel be ligatured; the gangrene occurs partly because of the interference with the entrance of blood into the limb and partly because of the pressure of the effused blood on the femoral vein interfering with the return of the blood from the limb. In operating the external iliac artery is difficult to control and there is no better method of preventing hæmorrhage than the making of a "boutonnière" as described by Mr. Brown, so that digital pressure may be exerted directly on to the vessel.

A man, aged 33 years, was kicked by a horse in the left groin on Nov. 7th, 1899, two hours before he was taken to the Leeds General Infirmary. On admission there was a large swelling of the size of a cocoanut completely filling Scarpa's triangle and extending upwards over Poupart's ligament for about an inch. The skin over the tumour was tense and of a dark purple colour and appeared to be on the point of giving way. There was no pulsation to be felt. The limb was cold. The posterior tibial artery could not be detected. The patient was suffering great agony. As it seemed likely that unless active measures were speedily adopted the tumour would give way the patient was put under ether within half an hour of his admission. As it was not possible to apply a tourniquet owing to the position of the swelling an incision was made parallel to Poupart's ligament and about two inches above and the tissues were divided down to the peritoneum.

On introducing the finger the external iliac artery could be felt as a solid cylinder. Having obtained control of possible bleeding in this way an incision five inches long was next made through the skin over the swelling, revealing a large quantity of extravasated blood. This was rapidly removed and the cavity was thoroughly washed out with hot boric lotion. The pressure on the iliac artery was then relaxed and at the bottom of the wound a circular clot appeared, rendering the position of the torn artery clearly visible. There was also hæmorrhage from the distal end; this was also a serviceable guide, as the vessel had been completely severed and the ends were separated by an interval of about one and a half inches. The opened ends were ligatured by silk and the wounds were closed and dressed in the ordinary way.

The subsequent history was uneventful save that a week after the operation there was an elevation of the temperature with pain in the left side and rusty sputum. There was dulness over the lower third of the left chest; this gradually cleared up. The man was now again at work. The pulsation re-appeared in the posterior tibial artery a month after the operation.

Remarks by Mr. BROWN.—The foregoing case is, I think, worth noting for these reasons: (1) the fact that it is possible to have complete rupture of the femoral artery from such an injury and the vein to escape; (2) the method adopted to control the hæmorrhage; and (3) the importance of the earliest possible interference in like cases. Had the swelling given way before the operation the patient would have been exposed to the almost certain infection of the wound, which would have greatly added to the risk of his life even if he had escaped death from hæmorrhage.

Medical Societies.

PATHOLOGICAL SOCIETY OF LONDON.

Discussion on the Forms and Significance of Proteids in the Urine.

A MEETING of this society was held on Feb. 20th, Mr. PEARCE GOULD, Acting President, being in the chair.

Professor W. D. HALLIBURTON opened a discussion on the Forms and Significance of the Proteids in the Urine. He commenced by expressing regret that one with more clinical experience had not been selected for the position. He saw, however, the advantage of debates of this kind in which pathologists of the laboratory could compare notes with those of the bedside; coöperation of this kind was most useful in combating the disadvantage of over-specialisation. He further regretted that he had nothing startling or even new to bring before the society, but he hoped that his remarks might lead to something valuable being brought out by others. Their knowledge concerning the proteids was still most imperfect, but every year saw some progress made. They were substances of great molecular weight, and the large size of the molecules doubtless explained why in normal circumstances they were not able to pierce the barriers of renal epithelium except in the minutest traces. The proteid matter, however, of normal urine was chiefly contained in the nubecula. Still, Mörner had shown that there was a trace of serum albumin even in normal urine. Serum albumin was also most abundant in the so-called physiological albuminuria, the causes of which were briefly alluded to. But in Bright's disease serum albumin was usually mixed with serum globulin, as Senator originally showed. The proportion in which these two proteids occurred still required to be more thoroughly worked out. But as a rule (to which there were occasional exceptions) the globulin was less abundant and the presence of much globulin was generally a serious condition. Some evidence was adduced to show that the molecules of globulin were larger than those of albumin, so the abundance of the latter could be accounted for on physical grounds. It was only after the renal epithelial cells were greatly damaged that globulin could make its way through them. Some exceptional conditions, such as Byrom Bramwell and Noël Paton's case of crystalline globulin in the urine, and cases of fibrinuria were mentioned. The fibrinogen molecule was probably still larger than that of serum globulin, hence its comparative rarity in the urine. A similar explanation would explain the fact why caseinogen of milk had never been found in cases where lactose was discoverable. Passing rapidly in review other and rarer urinary proteids Professor Halliburton dwelt next more especially on those with small molecules and distinguished between peptonuria and albumosuria. The former term should be restricted to those morbid conditions, usually of suppurative nature, in which bacterial digestion led to the formation of proteolytic products which were mainly cast out from the body by the kidneys. The substance most frequently found was not,

however, true peptone in Kühne's sense, but deutero-protecse. The term "albumosuria" was usually restricted to those rare cases in which, owing to osteomalacia and certain other bone diseases, the form of albumose that passed into the urine was hetero albumose. Only a few such cases had been fully recorded hitherto, and though there were small differences between the various cases they on the whole agreed fairly well with the description originally given by Bence Jones.

Dr. T. R. BRADSHAW (Liverpool) read a paper on the Forms and Significance of the Proteids found in the Urine in Myelopathic Albumosuria, a condition of which 11 authentic instances had hitherto been recorded. One example of the disease had been under his observation. The patient was a man aged 70 years. The illness had apparently commenced about a year before he died. There was extensive disease of the bones; but the most notable feature of the case was the voiding of milky urine. This was due to the presence of a proteid substance which was frequently precipitated spontaneously so that the urine presented an opaque white colour when it was passed. The most characteristic reactions given by this urine were the formation of a precipitate below 60° C. and precipitation by nitric acid and hydrochloric acid in the cold, all the precipitates being more or less soluble on boiling. The heat precipitate was entirely dissolved, without apparently undergoing any change in its nature, by a solution of caustic soda (1 per 1000). Careful analyses seemed to show that the proteid present was all of one kind, at least that if any other was present it was only in traces. As regards its nature, its reaction with nitric acid showed that it was an albumose, but it was doubtful whether it could be identified with any of the albumoses known to physiological chemistry. The balance of evidence pointed to its being an albumose of a peculiar kind which had not been found in any other conditions. Clinical experience showed that its appearance in the urine was the earliest available indication of an affection of the bones of the trunk, which, as far as their experience went, always proved fatal. Dr. Bradshaw demonstrated the characters and reactions of the urine and exhibited micro- and macro-scopic specimens taken from the case.

Dr. ROBERT HUTCHISON described a Peculiar Proteid found in the Urine of a man who subsequently died from multiple myeloid sarcoma. The proteid differed from the body first described by Bence Jones in these cases in being an albumin and not an albumose. But it also differed from all other albumins in having a very low coagulation point (58° C.), in being very readily denaturalised, and only slowly precipitated by acetic acid and ferro-cyanide of potash. Otherwise it gave all the reactions common to albumins. It contained no phosphorus and was not precipitated by ammonia, and was therefore not a nucleo-proteid. No chemical examination of the tumours could be made, but the case was undoubtedly one of multiple myeloid sarcoma, as verified by the necropsy, the neoplasm consisting of a large round-celled sarcoma. The urine presented no visible deposit; it was clear, of low specific gravity, and slightly alkaline.

Dr. F. W. PAVY remarked that he did not think albumin in any form could be found in healthy urine and they could not properly speak of physiological albuminuria though functional albuminuria might occur. On the other hand, as regards sugar that was a very different matter. This was a much more diffusible substance and the molecule very much smaller. He believed that the action of the kidneys as regards proteids might be likened to filtrative or osmotic processes, the activity of these processes depended on the amount of pressure and the size of the molecules. If the normal pressure in the renal vessels were slightly increased then albumin passed into the urine. He thought that perfectly healthy urine was not devoid of a certain kind of proteid—viz., nucleo-albumin or mucin—but only in small quantity, not sufficient to be detected by ordinary tests. These were thrown out from the surface of the urinary tract. This nucleo-albumin was the great rock on which observers split. But as regards the other proteids they appeared in urine as the result of diffusion. In peptonuria and albumosuria the proteids consisted of larger molecules. These were synthesised, but peptone and albumose appeared in urine as a result of the laws of osmosis. In general terms albumin was not a grave sign, as might be judged from the fact that in the most lethal of the renal affections (granular kidney) albumin might be altogether absent. He thought the circumstance that serum albumin was larger in quantity than serum globulin was quite accounted for by the fact that the former was more diffusible. Dr. Pavy then referred to the observations he had made on a man named Weston who walked at the Agricultural Hall 100 miles in 24 hours. At the end of 24 hours his urine was loaded with albumin and with casts. The dependence of proteids in the urine on the vascular condition of the kidneys was well exemplified by cyclic albuminuria. In this condition in the morning there was no albumin; after breakfast and when going about the albumin appeared. It was absent usually at night. This condition of matters went on all the year round. Such subjects were of a very "mobile" nature. Their vessels were easily influenced. The renal vessels were subjected to additional pressure when a person assumed the vertical posture. Dr. Coupland had noticed that a patient of his had albuminuria whenever she got up—i.e., during the morning—but it disappeared when the patient went to bed in the afternoon. He (Dr. Pavy) submitted that this was due to the altered state of pressure in the vessels of the kidney. No one had shown that the proportion between the serum albumin or serum globulin was a matter of any clinical or pathological significance. Moreover, the total amount of albumin was of no very great importance. The important data consisted of the presence of casts and the amount of urine passed; these were the measure of the gravity of a case.

The discussion was adjourned to the first meeting in April.

HARVEIAN SOCIETY OF LONDON.

The Feeding of Infants with Modified Milk.

A MEETING of this society was held on Feb. 15th, Dr. W. H. LAMB being in the chair.

Dr. G. F. BLACKER communicated some remarks upon the Feeding of Premature or Delicate Infants with Modified Milk. The majority of delicate infants throve best if fed upon the breast, and where the child could not be put to the breast directly the milk should be drawn off and given in a bottle. In premature delivery the breast milk retained its colostral properties longer than normal, often disagreeing with premature children, and for the majority of such children cows' milk was a suitable substitute when diluted. Any of the cream mixtures in common use would do quite well. In cases where cows' milk caused marked gastric disturbance modified milk or the method of ordering a mixture of cows' milk of varying composition according to the individual needs of the particular child would seem to be a distinct advance in the scientific feeding of young infants. The chief difference in the composition of cows' milk or human milk was in the relative percentage of the proteids and the fats. The modification of the strength of cows' milk to any degree was an easy matter. The mixtures of cows' milk and water given to infants were markedly deficient in fat. Modified milk contained a cream of stable composition and the amount of fat could be accurately regulated. Modified milk had the advantage in that it was made up with milk sugar and not with cane sugar. Milk laboratories for the preparation of modified milk were quite recent institutions in this country. The milk, carefully selected, was filtered and cooled to 40° F. The whole milk was then treated in a centrifugal separator, by which not only all the cream but also any dirt or foreign particles were separated out. The percentages of proteids and sugar varied little in selected milk, but the percentage of fat varied from day to day. When the percentage of fat had been estimated in each day's milk-supply the milk was ready to be combined in the modifying-room according to the prescription sent in. The materials used were cream with 16 per cent. of fat, separated milk, a 20 per cent. solution of milk sugar, and lime-water. The food was put up in tubes each containing the amount required for one feed with a plug of sterile cotton-wool. The tubes were then heated to 167° F. and then cooled to 38° F. In writing a prescription for modified milk it was best to order a small percentage of proteid to begin with and gradually increase the amount. The advantages of modified milk were that the exact composition was known, that the milk only required warming before being given, that no cleansing of the bottles was required, and that there was not that daily variation noted which was observed in ordinary cows' milk. The disadvantages of modified milk were that it entailed an increase of trouble to the medical attendant. Pasteurised or sterilised milk administered for long periods of time was apt to lead to the production of low forms of malnutrition, while the milk was only applicable to a certain class owing to the cost. Dr. Blacker concluded by stating that he considered that modified milk

was under certain conditions undoubtedly of great service in the feeding of delicate infants, and he now ordered it in cases where it was not possible to get a suitable milk-and-cream mixture made at home, and where otherwise condensed milk or asses' milk would have to be used, or a wet nurse obtained.

Dr. R. BOXALL remarked on the difficulty and expense obtaining modified milk except in large centres. If their milk-supply were regulated as, for instance, he had observed in the Eifel district of Germany, where a well-ordered public milk establishment was to be found in every village and hamlet, even among the poorest, modified milk could be readily obtained anywhere.

Dr. A. P. LUFF stated that in his opinion the method of preparing the milk described by Dr. Blacker was not without its possible drawbacks, in that the important anti-scorbutic elements of the milk might possibly be altered by the treatment employed. Although it was extremely desirable that the milk should be free from tubercle bacilli yet there were many beneficent bacteria which it was necessary for the health of the child should remain intact in the milk.

Dr. E. CAUTLEY and Dr. G. A. SUTHERLAND also discussed the paper.

Mr. FRANCIS JAFFREY read a paper on a case of Suppression of Urine of 60 hours' duration treated by operation which we hope to publish in an early issue.

NORTHUMBERLAND AND DURHAM MEDICAL SOCIETY.

Exhibition of Cases, &c.

THE fifth meeting of this society for the present session was held in the Royal Infirmary, Newcastle-on-Tyne, on Feb. 8th, Mr. A. E. MORISON, the Vice-President, being in the chair.

Mr. RUTHERFORD MORISON brought forward three patients operated upon for Abscess in connexion with the Appendix, illustrating points which he wished to raise. The first of the patients, a boy, was seen on the ninth day of his illness, without temperature but with a tender swelling in the right iliac fossa. On operation an abscess was found containing an ounce of pus on the inner side of the cæcum. The appendix was perforated and a loose stercorolith was lying in the abscess cavity. The presence of pus, Mr. Morison said, was an undonbted indication for operation, but in certain cases it was difficult to diagnose. If after the fourth day there was a tender mass the patient was the subject of appendicular abscess and therefore operation should not be delayed. The second patient, a boy, had had four previous attacks and on the fifth occasion he was seen to be seriously ill with doubtful diffuse septic peritonitis. In this case the abscess was simply incised and six months later the development of a similar illness occurred with a localised abscess which this time burst into the cæcum. On the seventh attack operation was undertaken before rupture with removal of the appendix. Mr. Morison strongly advocated removal of the appendix in suppurative cases. He had operated in six cases lately in which after simple incision attacks had recurred. In the case of the third patient, a girl, a hole was found upon operation communicating with the cæcum. Bursting of the abscess, then, was a not uncommon occurrence and might terminate in recovery without operation, but operation, by determining the direction of the evacuation of the pus, undoubtedly gave the best chance. Mr. Morison laid stress upon the following points: (1) the diagnosis of pus was largely determined by the presence of a tender mass; (2) even in the presence of an abscess the appendix should be removed, otherwise attacks might occur; and (3) such abscesses by bursting into the cæcum might terminate in cure—which was a result, however, neither to be waited for nor relied upon. Mr. Morison then showed a series of diagrams illustrating the various positions in which appendicular abscess might occur, and the anatomical positions taken by the vermiform appendix.—Dr. J. CLAY, Dr. BEATTIE, and Dr. JAMES DRUMMOND took part in the subsequent discussion.

Dr. ALBERT M. MARTIN showed a child, aged 11 weeks, who was born after a somewhat severe and tedious labour and at birth did not recover for 15 minutes. Since birth the present condition had developed. The arms were rotated in at the shoulders, the forearms were markedly supinated, rigidity being very evident, and the legs showed slight rigidity with exaltation of reflexes. There was no muscular wasting and no facial palsy. Dr. Martin took the view that the lesion was a hæmorrhage into the motor cortex and that this had probably resulted from asphyxia at birth. The treatment of the case was discussed and also its prognosis. Dr. Martin mentioned that these cases improved up to a certain point as the patient grew older, the legs, as in this case, showing earlier and more complete improvement than the arms.

Dr. MARTIN also brought forward a child, aged six months, who had had a Circumscribed Fluctuating Mass in the Right Side of the Neck since birth. It was no doubt a dermoid in connexion with the second bronchial cleft.

Dr. G. H. HUME showed a woman, 51 years of age, who three years ago developed stomach symptoms, with a Moveable Nodular Growth in the Situation of the Pylorus. Eighteen months after pylorectomy with removal of the glands a small nodule of doubtful character was noticed in the skin cicatrix. This did not quickly increase in size, and one year later at a second operation a hard malignant nodule in the margin of the liver to the left of the gall-bladder was removed after the application of an elastic ligature, the stump being treated extra-peritoneally. The patient made a good recovery, the wound having almost healed.

Dr. HUME also showed two men who had had symptoms of Dilatation of the Stomach for many years and after pyloroplasty had rapidly improved in their general condition, increase in weight being a prominent feature. Dr. Hume advocated the exploration of doubtful stomach cases, and emphasised the expediency in these cases of early operation.

Dr. T. OLIVER showed a man, aged 49 years, who had had a severe attack of Influenza five years ago which prevented him from working for six months. He had never been well since, and two years ago his present symptoms developed and had subsequently increased. He now displayed marked weakness and atrophy of the deltoids and of the muscles of the upper arms and chest and weakness of the legs with extensive fibrillation, together with increased reflexes. Along with this condition there was paralysis and atrophy of the tongue and of the orbicularis oris.

Dr. OLIVER also showed a drawing and specimen of a Pedunculated Tumour of the Labium which had been successfully removed.

Mr. WATSON showed a photograph of an unusual example of Hare Lip with Cleft extending into the Nose from the non-development of the fronto-nasal process.

LIVERPOOL MEDICAL INSTITUTION.

PATHOLOGICAL AND MICROSCOPICAL SECTION.

Spinal Descending Degeneration.—Ascending Tracts in the Spinal Cord.—Parasite of Cancer.—Exhibition of Specimens.

A MEETING of the above section was held on Feb. 15th, Dr. J. HILL ABRAM being in the chair.

Professor SHERRINGTON and Dr. LASLETT exhibited specimens from the Spinal Descending Degeneration produced in a dog by a semi-transverse section through the spinal cord performed at the region of the fourth lumbar nerve. The degeneration was practically confined to the half of the spinal cord on which the lesion had been made. The specimens had been prepared by the "Marchi" method. There were numbers of descending degenerate fibres in the ventral as well as in the lateral column of the cord.

Dr. WARRINGTON read a note describing an investigation carried out conjointly with Dr. Laslett on Ascending Tracts in the Spinal Cord of the Human Being. Two separate tracts were demonstrated and their course traced to the cerebellum.

Mr. KEITH MONSARRAT read a paper on the Parasite of Cancer. He had isolated an organism from carcinoma and had grown it upon various media, obtaining cultures from which inoculations had been made into the peritoneal cavity of guinea-pigs with the result that they developed new growths on the peritoneum and secondary growths in the internal organs. In these growths the parasitic organism was found in abundance and a further series of cultures were made. He stated that although the parasitic origin of cancer was

far from proved, it was nevertheless a good working hypothesis. The explanation of the uniformity of primary and secondary growths he considered was to be found in the intra-cellular migration of the parasite, so that the cancer cells carried within them to the new nidus the stimulus to their own multiplication and the cell type in this way remained the same. A description was then given of the parasites as observed in carcinomata, the considerable diversity of form being shown by micro-photographs, and a selective method of staining was described which had demonstrated several new points in their morphology. A comparison of the isolated organism and the "cancer-bodies" showed that morphologically they appeared to be identical, accounting for varieties of form in each. The investigation had been assisted by a grant from the British Medical Association. The paper was profusely illustrated by means of microscopic specimens, photo-micrographic transparencies, and coloured lantern slides.—Mr. F. T. PAUL, whilst admitting the presence of the bodies described, maintained that proof was still entirely wanting that they were the cause of cancer.—Professor BOYCE, Professor SHERRINGTON, Sir WILLIAM M. BANKS, and others also took part in the discussion.

The following specimens were shown:—

Mr. F. T. PAUL: Malignant Tumours of the Parotid Gland.

Mr. RUSHTON PARKER: (1) Stomach after Gastrostomy; (2) Pelvic Contents from a case of Obstruction of the Rectum; and (3) Odontoid Process of the Second Vertebra Detached and Bare from periostitis and caries.

Mr. KEITH MONSARRAT: Urethro-vesical Calculus.

NORTH LONDON MEDICAL AND CHIRURGICAL SOCIETY.—The January meeting of this society, Dr. C. E. Beevor being in the chair, was devoted to a discussion on Syphilis.—Mr. Albert Ehrmann showed a typical case of Primary Syphilis in a young man. The sore was on the prepuce. A macular eruption was just visible on the skin of the abdomen eight to nine weeks from the date of infection. Commenting upon the case Mr. Ehrmann said that in the treatment of syphilis by inunction as carried out at Aix-la-Chapelle the skin was usually considered to be in a fit condition for the absorption of mercury on the third or fourth day after the arrival of the patient. The dose used at first was from two grammes to three grammes daily, and this might be increased to four grammes or five grammes if the process was well borne. The latter dose was only increased in exceptional circumstances. The parts of the body where the mercurial ointment must be rubbed in from day to day were five in number. The two legs were treated on the first day, the two thighs on the second day, the chest and the abdomen on the third day, the back on the fourth day, and both arms on the fifth day. The nipples, the navel, and very hairy parts of the body were to be carefully avoided, for in these acne and eczema were easily induced by the rubbings. A great deal was said to depend upon the mode of rubbing. The rubbers were trained in making the inunctions with both hands with the proper force and for the proper length of time. The inunctions were made for the most part with the unguentum hydrargyri cinereum. The morning was considered the most favourable time for anointing, but not immediately after the bath, since the skin was then moist and the pores were filled with water and were not adapted for absorption. It was not advisable to perform inunction at bedtime, for perspiration was increased in bed and many patients became restless and could not sleep after the inunctions. Every day the patient took a half hour's bath at a temperature of 96·5° F., in which he removed the remaining portions of mercurial ointment, and every morning he drank from two to five glasses of thermal water. In many cases, about from the fifteenth to the twentieth inunction, a period arrived at which there was a diminution in the powers of absorption of the skin. After the twentieth day of treatment a steam bath of from 10 to 15 minutes' duration was taken on alternate days or on every third day. After the steam bath an ordinary bath was taken for 10 minutes, followed by a cold douche to prevent chilling. With regard to the manner in which the mercury entered the system Wings thought that there was a direct transit of mercurial vapour, while Fürbringer said that there was a chemical change in the metal deposited in the skin by combination with the secretions of the skin. Wings found that the quantity of mercury volatilised in the skin and penetrating through that tissue in 24 hours was equivalent to the usual dose of perchloride of mercury used in intramuscular injections. The real effect of the thermal sulphurous waters in aiding specific remedies in syphilis was due partly to the beneficial effect of the spa treatment on general nutrition and in part to their direct action on the skin. Neisser said that during the inunction treatment the baths washed away some of the mercury which would otherwise be absorbed and the sulphurous baths converted some of the mercury into the inactive sulphide. He suggested that sulphurous waters might help to ward off mercurial enteritis and that even common salt waters might be of use by their action of favouring metabolic processes generally, and also those undergone by the mercury in its "passage through the system." In the treatment of the later stages of syphilis, while the value of iodide of potassium was recognised the leading rôle was still given to mercury. This drug had apparently the real curative effect, while the former, by causing the rapid disappearance of symptoms, might induce a feeling of false security in many cases.—Dr. A. Whitfield, in discussing the treatment of syphilis in the earlier periods, referred to the question as to when mercurial treatment should be first instituted. He said that he should be inclined to give mercury directly he was certain of his diagnosis, and he gave as the points upon which he would rely the cartilaginous consistency of the sore, thickening and induration of the dorsal lymphatics of the penis, elastic and painless swelling of the glands in the groins, and, if all these were not pronounced, general adenitis. In those cases in which such a chain of symptoms was not well marked he would prefer to wait for the early rash before committing his patient to a long course of mercury. He believed that the question at issue between those who liked to wait for the development of rash before instituting treatment and those who began treatment at once was not of serious importance. In Germany and Austria the waiting plan was almost universal, and the results did not seem to be inferior to those in this country. As regards the preparation of mercury which he preferred, he might say that he was in the habit of always using grey powder in small doses (one grain) two or three times a day. It was a good plan also to prescribe a gargle of chlorate of potash for use as a mouth-wash in every case. This acted more or less as a prophylactic against stomatitis. In some cases he gave iodide of potassium quite early in the disease, usually merely to relieve symptoms, such as severe headache, osteocopic pains or joint pains, or if the throat condition was severe and appeared aggravated by mercury. In such cases it was as well to cut off the mercury and to use iodide and local gargles until the throat was well, when the mercury should be recommenced. In late syphilis of the skin he relied to a greater extent on local remedies, but he always gave mercury internally, whether with iodide or not, as he believed that relapses were less common with such treatment. He called attention to a form of treatment for cachectic and malignant cases which was seldom used in this country—viz., Zittmann's decoction. The method was extremely full of detail as to diet, temperature of room, &c., but the results were such as to justify the trouble taken. The medicinal treatment consisted mostly of a mixture of alum, senna, and sarsaparilla with minute quantities of calomel. Dr. Whitfield showed two cases illustrative of late syphilis and irritation. Case 1 was that of a woman with a history of syphilis five years before who was now suffering from two patches of grouped papules below the left patella, the more marked of the two being situated just where kneeling would irritate the skin. It was pointed out how like this form of eruption was to lupus, but the superior hardness and the more rapid formation of the syphilide cleared up the diagnosis. Case 2 was that of a man with a subcutaneous gumma which had formed just where a strap which he wore on his arm chafed him. His original attack dated apparently from more than three years before but he was not clear as to his history.—Dr. W. H. Day, who advised circumcision for Mr. Ehrmann's patient, Dr. G. F. Blacker, Mr. H. S. Elworthy, and Mr. Mower White also took part in the discussion.

OTOLOGICAL SOCIETY OF THE UNITED KINGDOM.—The first ordinary meeting of this society was held on Feb. 5th, at Chandos-street, Cavendish-square, Sir William Dalby, the President, being in the chair. After lamenting the death of Dr. Charles Delstanche of Brussels the

President gave an inaugural address, which was published in THE LANCET of Feb. 10th.—Dr. Urban Pritchard then read a paper on Anti septic Purification of the Meatus and Adjacent Parts, both for Operation and as a Treatment of Chronic Middle-Ear Suppuration. It was pointed out that antiseptics could be applied to the meatus and intact membrane in the same way as in other parts of the body with similar results, and also that an initial thorough purification of the middle-ear and meatus followed by careful packing with double cyanide gauze was an excellent method of treating certain cases of chronic middle-ear suppuration.—A discussion followed in which the President, Mr. A. E. Cumberbatch, Dr. A. Bronner, Dr. Milligan, Dr. Macnaughton Jones, and Mr. Arthur Cheatle took part.—Dr. Milligan read the notes of a case of Cerebellar Abscess which he had recently operated upon. The intracranial lesion followed an attack of acute middle-ear suppuration of only a few weeks' duration. During the first operation sudden paralysis of the respiratory centre intervened necessitating the evacuation of the abscess being performed while artificial respiration was kept up. A month later it was found necessary again to explore the cerebellum when another abscess was found and drained, but although the patient rallied from the operation death occurred. At the post-mortem examination no macroscopical connexion between the ear and cerebellar lesion could be found.—Mr. Ballance, in discussing the case, suggested that the abscess had no connexion with the middle-ear trouble and cited some cases of the late Dr. Bristow in which abscesses in various parts of the brain were attributed to influenza. He had operated on three cases of cerebellar abscess during artificial respiration. He found that the best organ for exploring the brain was the finger and drew attention to a thin oyster-shaped abscess which was occasionally present immediately underneath the tentorium and of which he had seen three instances.—Dr. Urban Pritchard showed a patient from whom a large Cholesteatomatous Mass had been removed through the Meatus. The disease had completely hollowed out the antrum and mastoid process and by eroding the posterior meatal wall had laid these cavities open into the meatus.—Dr. Dundas Grant showed a case of Thrombo-phlebitis of the Lateral Sinus treated by operation without ligature of the internal jugular vein, with recovery. When the sinus was laid open it was found that the septic contents were bounded above and below by healthy-looking clot.—Dr. Herbert Tilley showed: 1. A large mass of Cholesteatoma removed from a boy, aged 14 years. The middle-ear, antrum, attic, mastoid process, and meatus were converted into one cavity by the disease. 2. A mass of Cholesteatoma which was removed through the meatus, the removal practically curing a distressing cough from which the patient had been suffering.—Mr. L. A. Lawrence showed an elderly woman with a Papillomatous Growth growing from the Meatal Wall. The microscopical section was shown.—Mr. Arthur Cheatle showed (1) a woman, aged 28 years, in whom he had removed a large part of the Auricle and the whole of the Meatus for an Adeno-carcinomatous Growth, which started in the posterior cartilaginous meatal wall. The operation had been performed one year and three months previously and there had not been any recurrence since; as the meatus could not be kept open, and as chronic middle-ear suppuration existed, the complete post aural operation had also been performed, and a permanent opening behind the remains of the auricle established. The specimen and microscopical section were also shown. 2. A boy, aged 14 years, who had recovered from septic thrombosis of the lateral sinus without ligature of the internal jugular vein. The septic contents were limited above and below by healthy clot.—Dr. Ernest Waggett showed a case of Sequestration of the Cochlea in a case of cured Cerebellar Abscess. Since the description of the case at the last meeting of the British Medical Association a portion of the cochlea had come away. The specimen was also shown.—The discussion on the cases shown by Dr. Dundas Grant, Dr. Waggett, and Mr. Arthur Cheatle was adjourned until the next meeting on March 5th.

WEST PENWITH (CORNWALL) MEDICAL SOCIETY.—A meeting of this society was held at Penzance on Feb. 14th, Mr. W. S. Bennett, the Vice-President, being in the chair. Two new members were elected.—Dr. F. Chown read a paper on Some Points in the Prevention and Treatment of Diphtheria. Dr. Chown advocated the determination of quarantine in each case by bacteriological tests, facilities for which should be supplied by sanitary authorities. For treatment thorough local antisepsis was demanded. Antitoxin he had not found of much value. In paralytic cases strychnine (subcutaneously if necessary, especially where cardiac dilatation supervened) and naso-pharyngeal or rectal feeding were most useful. In laryngeal cases the old ipecacuanha treatment with steam tent was generally good. Small doses of chloral were called for if much spasm of the glottis existed. A consensus of opinion declared in favour of the power of antitoxin in loosening the membrane. Epigastric retraction, which might, however, be exaggerated in rickety children, and cyanosis, which was a symptom of unmistakeable significance, were indications of the need of operative interference. Tracheotomy was preferred to intubation, as it was more easily performed, as the tube was more constantly retained, and as greater facility was given for the mechanical detachment of membrane. A useful point of technique for the inexperienced operator was the tearing of the parts with two pairs of spring dressing forceps after the skin and fat had been cut through.—Dr. H. M. Montgomerie showed a young Albino Girl and contributed notes on three cases of Cerebral Embolism: (1) a female, aged 59 years; (2) a female, aged 29 years; and (3) a male, aged 36 years. In the first case there was profound coma, gradually disappearing; in the second case there was semi-coma passing off in a few days; and in the third case no mental disturbance was perceptible. In all three cases there was complete right hemiplegia for a time. In Case 1 there were complete anæsthesia and total aphasia. On the fifteenth day slight power recurred in the right foot; this power and sensation gradually increased. Eighteen days later "yes" and "no" could be indistinctly uttered. Motor aphasia with word-blindness and word-deafness, for a time complete, were very slowly recovered from. There was also for a time complete loss of bladder control. The patient was a subject of chronic bronchitis with mitral heart. In Case 2 the patient was hemiplegic. He had epileptic attacks at long intervals for some years and eight years before the hemiplegic attack had acute rheumatism, leaving aortic stenosis. Anæsthesia was partial and aphasia was considerable; there was marked word-deafness with word-blindness. Bladder control was unimpaired. In Case 3, though the hemiplegia was at first complete, slight movement in the right foot returned within 24 hours and slight movement in the right arm on the following day. On the fifth day the thumb and index finger could be for the first time a little moved. Sensation was very little dulled and there was for the first day or two a slightly perceptible slurring of speech. There was never the least sign of want of control over the bladder. In this case there was a history of pulmonary catarrh with slight hæmoptysis. Case 1 occurred eight months ago, Case 2 11 days ago, and Case 3 in November, 1895. All the patients were still alive.—After a short discussion on the papers the members of the society present dined together.

IPSWICH CLINICAL SOCIETY.—The annual meeting of this society was held on Feb. 8th at the East Suffolk and Ipswich Hospital Mr. Hoyland, being in the chair.—Mr. C. K. Moseley was elected President for the ensuing year and Mr. Walter Sinclair was re-elected honorary secretary. The following were elected members of the Council: Mr. R. W. Brogden, Dr. H. H. Brown, Mr. J. F. C. Hossack, Mr. S. S. Hoyland, Mr. J. R. Staddon, and Dr. F. Warner.—Mr. Walter Sinclair showed (1) a case of Interstitial Keratitis, and (2) a case of Lamellar Cataract, with remarks on the cause and the treatment of these conditions.—Mr. R. W. Brogden showed a man with Peculiar Nervous Symptoms. The patient walked with his feet wide apart and dragged each leg slightly. When asked to stand with his feet together and his eyes closed, he staggered backwards with a succession of short steps on his heels. On attempting to carry a glass of water to his mouth his hand trembled markedly, and at times, when standing, his legs trembled so violently that the whole ward was shaken. The knee-jerks seemed somewhat exaggerated, but varied. There were no clonus, no pupil symptoms, and no ophthalmoscopic abnormality. The patient referred his condition to an injury to the spine. Most of those present agreed with Mr. Brogden's opinion that the patient was probably a malingerer.—Mr. Wynne Davies showed a well-marked case of Ichthyosis in a child. No history could be

be obtained. The skin disease was recovering rapidly under salicylate ointment, and thyroid extract given internally.—Mr. C K. Moseley referred to the frequency with which a history of "maternal impression" was given in these cases.—Dr. H. H. Brown showed a Tumour weighing five pounds which was removed by Mr. Dean. It was a myoma taking its origin from the cervix and growing between the layers of the broad ligament. It caused almost no symptoms and the patient was doing well.—Dr. Brown also showed an Apparatus which he had devised for treating Dislocation of the Acromial End of the Clavicle. Such dislocations were easy to reduce, but it was notoriously difficult to keep the bones in position. His apparatus had given an excellent result in the case for which it was devised.

GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY.—The fifth meeting of this society was held on Feb. 12th, Dr. Thomas Barr, the President, being in the chair.—Dr. T. K. Dalziel showed:—1. A series of seven cases of Gall-stones removed from the Bile Ducts. 2. Two patients, mother and daughter, on whom he had operated several times for Sarcoma with Recurrence. The mother had a sarcoma of the left lacrymal gland removed in 1892. At intervals of 12 months the following parts became affected and were successively removed: (*a*) the floor of the orbit, the eyeball, and the lower lid; (*b*) the cheek down to near the margin of the upper lip; (*c*) nodule at the angle of the jaw; and (*d*) a mass over and involving the mastoid process. Seven months later the superior maxilla was excised, followed in eight months by the pterygoid process, the soft palate, and the lateral wall of the pharynx. The daughter had the right lower jaw excised with a mass of lymphatic glands, and six months later an enlarged gland was removed from the region of the cicatrix. All of these tumours presented the characters of round-celled sarcoma. 3. A Calculus from a Male Bladder with Nucleus formed of a piece of Indiarubber Tube of an Infant's Feeding-Bottle.—Professor Muir exhibited the Kidneys from a case of Diabetes. The organs showed extensive infection by staphylococci—Dr. D. N. Knox showed a Piece of the Jejunum Obstructed by a Large Gall-stone.—Dr. Ebenezer Duncan showed (1) a Calcification of the Pericardium; (2) a specimen of Mitral Stenosis; and (3) a Carcinomatous Tumour at the Root of the Left Lung pressing on the Bronchus and on the Œsophagus.

MANCHESTER MEDICAL SOCIETY.—A meeting of this society was held on Feb. 7th, Dr. T. C. Railton, the President, being in the chair.—The President delivered his presidential address on Infant Mortality and dealt with the increasing mortality among young children in large towns from diarrhœa and dietetic diseases. The necessity for the centralisation of the milk-supplies in large establishments, where pasteurising and humanising milk could be carried out under scientific supervision before distribution to the retail milk dealers, was urged and the growing employment of proprietary foods was condemned. He advocated a much wider intervention on the part of the profession in public affairs, especially in institutions having an influence upon child life, and suggested the more frequent delivery of popular lectures for the education of the public as to the proper methods of bringing up children.—Dr. W. E. Fothergill communicated a paper on the Results of the Administration of Salol and of Petroleum in Infantile Diarrhœa. The cases were observed by Dr. John Penny and himself at the Chorlton Dispensary during the summer of 1899. In 35 cases salol was used. Two children died, six did not recover until other drugs were used, while the remaining 27 cases recovered rapidly and completely under the influence of salol alone. An emulsion containing 33·3 per cent. of petroleum was given in 32 cases. One child died, two recovered slowly after the exhibition of other drugs, and the remaining 29 cases ended quickly and favourably after treatment by petroleum alone.

OXFORD MEDICAL SOCIETY.—The fourth meeting of the session was held on Feb. 9th, in the Anatomical Theatre, when Dr. Ramsden read a paper on the Clinical Value of Blood Examinations, illustrated by diagrams and microscopic specimens. After urging the importance of this subject he proceeded to describe what seemed to him to be the best methods and gave a number of instances where such examinations had proved practically useful. The significance of the various leucocytes, normal and abnormal, and of the alterations in their quantitative relations were discussed, and it was maintained that, whether for diagnosis or prognosis, the blood often gave indications of considerable value. For blood-films Jenner's method of staining was strongly recommended as the simplest and most satisfactory yet devised and as quite sufficient for all clinical purposes. Dr. George Oliver's hæmoglobinometer was the most accurate, but Sir William Gowers's instrument was sufficiently so if precautions were taken to employ a correct standard, and if the true reading was taken as the mean of the dilution which was just insufficient and of that which was just too much. Estimations of fibrin were of little practical value, as the methods used were open to serious objection. Nucleated red blood corpuscles were specially apt to appear in the general circulation in Bright's disease. Their absence together with the absence of eosinophilous cells in cases of severe anæmia was a bad sign.

ÆSCULAPIAN SOCIETY OF LONDON.—A meeting of this society was held on Feb. 16th, the Vice-President, Dr. B. G. Morison, being in the chair.—Mr. E. C. Hearne showed a young woman who in November, 1891, had Hyalitis, so that only the upper part of the fundus oculi was visible, and the patient's sight in the affected eye was reduced to perception of a hand at 50 centimetres. The defect had been increasing for a year and was thought to have been induced by a fall on the nose, after which an internal squint soon developed in the affected eye. In seven months the condition had not improved. In April, 1898, the vision of the affected eye was $\frac{2}{3}$ Jaeger 1.—Mr. E. C. Hearne also read notes of a case of Ptosis with Paresis of the External Rectus and a Dilated Sluggish Pupil in a fat man who had had syphilis three years previously. Under the administration of iodide of potassium (0·6 gramme three times a day) the ptosis and glycosuria, previously very marked, completely disappeared, but still left some external rectus paresis, though less.—Dr. C. G. Mack read notes of a case of a man, aged 41 years, who suffered from increasing intestinal colic with constipation. A median laparotomy was performed by Mr. A. H. Tubby who found the sigmoid flexure encircled by a malignant growth. Accordingly a lateral colotomy was carried out. The result was successful.

SOUTHPORT MEDICAL SOCIETY.—The usual monthly meeting of this society was held on Feb. 14th.—Dr. Robert Harris was elected to the office of President, the post being vacant through the death of Dr. H. H. Vernon. A vote of condolence with the wife and family of the late Dr. Vernon was unanimously passed.—Dr. J. C. Russel made a communication on the Spasmodic Structure of the Œsophagus, and he showed an Air Dilator which he had invented for the treatment of this condition and had found to prove very successful.—Mr. J. Forrester Wood showed a case of Compound Depressed Fracture of the Skull with trephining.—Dr. Stopford Taylor gave an interesting lantern lecture on various Skin Affections, with practical comments. About 60 lantern slides were shown and the demonstration was much appreciated by the members.

PATHOLOGICAL SOCIETY OF MANCHESTER.—A meeting of this society was held at Owens College on Feb. 4th, Mr. Thorburn, the President, being in the chair.—Dr. Nathan Raw opened a discussion on the Pathology of Pneumonia, with Special Reference to its Bacteriology. He reviewed at length the various theories which had been put forward and the supposed influence of chill in the causation of the disease. He said that the evidence was all in favour of pneumonia, being a specific disease due to a micro-organism, the diplococcus of Fränkel, and that the treatment of the future would be antitoxic.—A number of members took part in the prolonged and interesting discussion which followed and Dr. Raw exhibited a large number of specimens.—Other preparations were shown as card specimens.

WIGAN MEDICAL SOCIETY.—The annual general meeting of this society was held on Feb. 15th, when the following office-bearers for the ensuing year were unanimously elected:—President: Mr. R. H. Cowan. Committee: Mr. R. H. Cowan (President), Mr. Luther Cooke (ex-President), Mr. C. M. Brady, Mr. W. Mitchell Roocroft, Dr. J. Blair, Dr. M. Benson, Dr. R. P. White, and Mr. C. R. Graham. Honorary treasurer: Mr. E. H. Monks. Honorary secretary: Mr. W. Berry. The annual dinner followed.

Reviews and Notices of Books.

A Text-book of Diseases of the Nose and Throat. By D. BRADEN KYLE, M.D., Clinical Professor of Laryngology and Rhinology, Jefferson Medical College, &c. London: Rebman, Limited. Philadelphia, U.S.A.: W. B. Saunders. 1899. Pp. 646.

THIS is a well-bound and comprehensive book of over 600 pages. 340 pages are devoted to diseases of the nose and naso-pharynx. This part of the subject is very full and elaborate and the classification adopted by the author is original. The book opens with a short chapter on the Anatomy and Physiology of the Nose, and we are glad to find that the author is brief on this part of the subject, which can be studied so abundantly elsewhere. The examination of cases of nasal disease is excellently described and Fig. 14 shows more accurately than is usual in works of this kind the appearances seen in the rhinoscopic mirror on posterior rhinoscopy. The author speaks highly of posterior illumination in diseases of the nose and figures several novel "atomizers" which he has found useful in his practice. He discusses the subject of nasal bacteria, but concludes that they play quite a secondary part in producing disease. This opinion is well expressed and is of some value. The classification of the varieties of rhinitis seems unduly elaborate and we venture to think that a clinical observer would have some difficulty in being able to differentiate the various affections of the mucous membrane of the nose pathologically described. So far as we can judge, this part of the book is free from speculative methods of treatment. In the treatment of atrophic rhinitis and ozæna the author dwells upon the methods and importance of methodical cleansing of the nasal cavities and does not advocate the use of the curette or operations upon the turbinals. Throughout the book an attempt is made to base diagnosis and treatment upon pathological alterations. In some places the descriptions are hardly clear and perhaps might not meet with general acceptance. On pages 51 and 52 we read as follows:—

"Where the floor of the nose or superior maxillary bone is thin from deficient breathing in early childhood or other cause, the terminal nerve-filaments going to the root of the tooth course superficially along the floor of the nose, and in cases of deflected septum, where the deflection is close to the floor of the nose, with redundant tissue, the inflammatory process injures the nerve-roots and causes devitalised teeth, or may ulcerate and produce a sinus, discharging around the tooth, simulating pyorrhœa alveolaris. I have observed a number of such cases."

The classification of tumours and growths of the nose is founded on general principles. In our opinion the author hardly lays stress enough on the practical difficulties met with in cases of inveterate nasal polypi and especially the co-existence of necrosis and sinus suppuration. He opposes the after-treatment of removal of polypi by the galvanic cautery and caustics, in which he would not receive universal support. Many authorities in this country look upon the persevering use of the cautery or such applications as chromic acid as very essential in the permanent eradication of polypoid growths.

The diseases of the naso-pharynx are well given. We think that the various modes of operating for adenoids might with advantage have been more fully given and the all-important subject of the administration of anæsthetics in this and similar operations is, we consider, too shortly dismissed. A good account of the difficult subject of sinus suppurations is to be found in this book. Opening the sphenoidal cells by a sharp instrument guided by the rhinoscope must be a surgical proceeding to be performed by the very few. On the diagnosis of frontal sinus suppuration the author does not dwell upon catheterisation through the infundibulum as being of much value and trans-illumination is at best a very poor guide. A short but useful chapter is introduced on Related Conditions of the Eye and Nose in Disease.

The section on Diseases of the Larynx is full and accurate. Separate chapters are devoted to Intubation and Tracheotomy. Professor Keen contributes a short article on Laryngeal Operations by External Incision and advocates the Trendelenburg position. The work concludes with a copious index. Throughout we find many suggestions for treatment, therapeutical and otherwise. Some of them are novel, and the book bears the stamp of originality and experience.

The volume is illustrated profusely by 175 illustrations, 23 of which are coloured. Most of these are new and some are exceedingly good. As instances we may mention "Adhesions of the Soft Palate to the Pharynx" (Fig. 121), and "Enlarged Tonsils" (Fig. 126). The coloured plates of sections of adenoids are beautifully executed. The book is well printed and got up and the misprints are very few. It is a useful and complete treatise and will doubtless be read by those practising in this class of medical and surgical diseases.

Insects. By D. SHARP, F.R.S. Being Vol. V. (in part) and Vol. VI. of "The Cambridge Natural History." Edited by S. F. HARMER, F.R.S., and A. E. SHIPLEY, M.A. London: Macmillan and Co. 1895 and 1899. Price 17*s.* net. each vol.

THIS bulky work is the most comprehensive modern treatise upon insects in the English language with which we are acquainted. Its bulk is due to the industry and extremely wide knowledge of its author, and not to that unwholesome substance known as padding. Dr. Sharp is eminently qualified to write upon this subject, being one of our best known entomologists; and he has proved that an entomologist whose main repute is derived from contributions to a single group does not always go through the world, as the late Professor Chandler of Oxford once said in our hearing, "seeing only beetles." Although Dr. Sharp occupies to the full, even increasing their dimensions here and there by the use of small type, more than 1100 pages it cannot be said that either he or his editors have been without a due sense of perspective. As the author tells us in his very first sentence, "Insects form by far the larger part of the land animals of the world; they outnumber in species all the other terrestrial animals together, while compared with the vertebrates their numbers are simply enormous." In a more striking phrase Dr. Sharp observes that "the larger part of the animal matter existing on the lands of the globe is in all probability locked up in the forms of insects." With such an immense mass of matter before him it is pleasing, but not unexpected from what we know of the author, to find that he abhors all the twaddling tales which have collected round the natural history of insects more than round any other group of animals. It must not be imagined from this that the author disdains what is called "natural history" by the reading but non-expert populace and "biologie" by the Germans. There is much of interest told about habits and ways of life, particularly among those astounding "*intellectuels*" wasps, ants, and bees. We can commend his account of ants as one of the best and most comprehensive of the sections dealt with in the two volumes. Dr. Sharp seems to have omitted nothing upon which we have sought information by the help of an apparently very detailed index. Recently the myth of the ancients concerning the propagation of bees has been dealt with by a well-known student of insects, Baron Osten-Sacken. Most of our readers will recollect in the Fourth Georgic the account of the generation of bees from the well "tunded" carcass of a young bull whose horns have just begun to sprout. "When the meadows

are enamelled with their earliest flowers" worms appear in the carcass from which bees are born. Now it appears from the highly reasonable explanations of the entomologist whose name has just been cited that what the ancients mistook for bees were certain flies belonging to the genus eristalis, which are singularly like bees, and of which one species, the drone fly, must be familiar to most persons. This opens up an interesting question which baffled Kirby and Spence, though some of our more modern theorists appear to find no difficulties at all in the explanation. This and some other flies have the most accurate likeness to bees and to wasps in various non-essentials. No naturalist could, of course, confuse them, but their general aspect is un-fly-like and very bee- or wasp-like. One genus (volucella) has the daring habit of entering the hives of bees and the nests of wasps and there depositing its eggs. It needs no theory at all to emphasise the remarkable immunity which both the flies and their offspring secure at the hands, or perhaps rather jaws, of the hymenoptera. It has been suggested—indeed, there has been a tendency positively to assert—that the likeness of the flies to bees allows them to evade the attentions of their involuntary hosts. This is an example, only too frequent in the views of those who deal with the singular phenomena commonly called "mimicry," of rash generalisation without an adequate basis of fact. "There are no facts," observes Dr. Sharp, "to support any theory on the subject." The flies get there—that is all we know. That bees and wasps would be perfectly capable of ejecting, and willing to eject, them seems obvious when we reflect upon the accurate senses which enable these hymenoptera to distinguish the inmates of another nest, but they do not. Dr. Sharp thinks that the fly larvæ in question play the useful part of scavengers in the nest.

From flies to fleas is not, according to Dr. Sharp, a great jump. The latter were at one time made into a separate group called aptera. This name is at present reserved for two curious groups of insects—the collembola and thysanura—which are regarded as representing more nearly than any living forms the ancestral types of insect life. The fleas are simply flies degraded through perpetual parasitism. 100 species exist, so that parasitism is here, as in so many other cases, e.g., the tapeworms, productive of much variability of animals. The common flea of man, pulex irritans, is found all over the world. Indeed we have reason to believe that the only animals which are true cosmopolites are man and his parasites. It is a curious fact that monkeys possess no fleas save in exceptional cases of weakness or illness. This immunity seems to be due to the habit that these creatures have of perpetually searching for supposed residents on their skin.

Readers who are less interested in anatomical and embryological details than in gossipy tit-bits will find much to allure them in this book. Every summer, the last for instance, there is much correspondence in the newspapers concerning "mosquitos." "Although there are few insects," writes the author, "more often referred to in general literature than mosquitos yet the ideas in vogue about them are of the vaguest character." The main idea in the mind of the public appears to be that the mosquito is a poisonous exotic insect which occasionally ravages this country. As a matter of fact there are ten indigenous species in this country of which culex pipiens is *the* mosquito *par excellence*. It is a common species in central and southern England, Dr. Sharp tells us. It also exists abroad and is "one of the most troublesome mosquitos of East India." There are many interesting facts and not a few theories about this widely spread pest. Those who have been in the extreme north of Europe should know and dread it well; there it abounds on account of the abundance of water which is essential to its well-being as the eggs are laid in water and the larva lives there. Millions of these flies exist who can have had no opportunity of tasting human blood; yet with unerring instinct they will fasten upon the first man who breaks into their solitude and literally "tap his claret" with precision. Mr. Hudson has pointed out this singular case of instinct which is the less intelligible as they appear normally to feed upon the juices of plants. Another puzzling fact is that the female, who alone bites, injects a poison into the wound; this seems to be a purposeless form of irritation. It is, however, suggested that the irritant fluid is for the purpose of preventing the coagulation of the "plant juices during the process of suction." To the physician this group of flies is becoming of especial importance because of their influence on dissemination of disease.

Probably the majority of those persons who are interested in insects have a special leaning towards the butterflies and moths. They will find all reasonable curiosity concerning the ways of life of these creatures satisfied in the volume before us. Dr. Sharp adheres to the now rather old-fashioned division of the lepidoptera into butterflies and moths. There are not, however, two such opposed groups, though it is true that "all lepidoptera that are not butterflies are heterocera (i.e., moths)."

To the inexpert mind anything that flies by night and is dully coloured is a moth, while day-flying habits and brilliant colouration are supposed to denote a butterfly. This, of course, will never do. Many moths rival the most gorgeous of butterflies in their hues, while some of the danaidæ (we think) are often found in the early morning glued to lamp-posts like "strayed revellers" of another species. Some of the more senescent and obsolescent theories upon animal colours have been based upon these insects. Dr. Sharp says of the puss moth and the views about its larva that it realises the dictum of D. O'Phace, Esq.:—

> "Some flossifers think that a fakkilty's granted
> The minnit it's proved to be thoroughly wanted."

This caterpillar has a pair of "tails" from which can be protruded flagella which whip about in a threatening manner. It is believed by some that the object of these is to lash off prowling ichneumons. But it is an expensive method, if it be so, of producing an apparently negative result; for these larvæ are quite as much "ichneumoned" as others. Then it has a terrifying attitude; but we have yet to learn that little birds are frightened, like little boys, by having faces pulled at them. Dr. Sharp treats these matters with a good-humoured note or two, which form, as is right, but a minute fraction of the book. It will have been gathered, we hope, that this is a book abounding in facts well and clearly put, which should be in the hands of everyone devoted at all to insects. Its handiness for the student of this group is further increased by a very large number of illustrations in the text, a large proportion of which are quite new and specially designed for this work.

The Story of Life's Mechanism: A Review of the Conclusions of Modern Biology in Regard to the Mechanism which Controls the Phenomena of Living Activity. By H. W. CONN. London: George Newnes, Limited. 1899. Pp. 219. 50 Illustrations. Price 1*s*.

THE "Library of Useful Stories" continues to grow, the subject of this review being one of its latest additions. As its sub-title indicates, this little book considers some of the problems presented by modern biology.

The work is divided into an introduction and two parts. The introduction is mainly historical, dealing with various discoveries which have had an important influence upon modern lines of thought. Part 1 is divided into two chapters, the first of which defines a machine, and then

enters into a comparison between such a mechanical contrivance and an organised body. It then passes on to the consideration of the chief vital functions and other matters. Chapter II. deals with the cell and protoplasm, including a description of the phenomena attending karyokinesis, fertilisation, &c. Part 2 contains but one chapter which, among other matters, discusses evolution, reproduction, heredity, and variation.

On the whole the book is distinctly good; there are a few points, however, which might be improved. We refer more especially to the illustrations. Firstly, some are, in our copy at least, somewhat indistinct. Then, again, a botanist would hardly consider Fig. 10 to represent a typical longitudinal section of a root apex. The impression gained from Fig. 12, illustrating "plant cells with thick walls," is that the cells have thin walls and the protoplasm has shrunk, thus giving the appearance of clear spaces between the cell walls and contents. A wrong impression is so easily obtained by the general reader that too much care cannot be bestowed on a popular book of science, especially as regards the illustrations, and this being so it would have been as well to have stated what particular animal or plant each figure illustrates; this has been done in some cases, but not in all.

On page 91 it may be read that "Schultze experimented with this material by all means at his command, and finding that the cell substance in all animals and plants obeys the same tests reached the conclusion that the cell substance in animals and plants is always identical." Surely it was Cohn who, in 1850, first enunciated the fact that the sarcode of the zoologists was identical with the protoplasm of Von Mohl.

The book is very clearly written and will give those who desire it an excellent conception of some of the problems which are engaging the attention of biologists at the present time.

JOURNALS.

The Journal of Physiology. Edited by Sir MICHAEL FOSTER, F.R.S., and J. N. LANGLEY, Sc.D., F.R.S. Vol. XXV., No. 3. London: C. J. Clay and Sons. Feb. 2nd, 1900. Pp. 54. Price 4*s*.—The articles contained in this part are seven in number. The first is by W. H. Thompson, M.D., and is a continuation of his researches on the Influence of Peptone and Albuminoses on the Urinary Secretion. He concludes from his experiments that at least 60 per cent. of peptone or proteose introduced directly into the circulation is retained in the body; that a larger proportion of deutero-proteose, of purified amphopeptone, and of antipeptone appears to be retained than of the primary proteoses, and that it is probable that the proteoses are held in combination with one of the globulins of the blood plasma as proteose globulinalis. 2. R. E. Lloyd, B.Sc.: On Chromatolysis in Deiters' Nucleus after Hemisection of the Cord. The investigation tends to show that after a unilateral lesion of the cord involving the antero-lateral descending tract most of the cells of Deiters' nucleus undergo chromatolysis. The inference drawn by Mr. Lloyd is that the fibres of this tract take origin in Deiters' nucleus and not in the cerebellum. 3. H. H. Dale, B.A.: On Some Numerical Comparisons of the Centripetal and Centrifugal Medullated Nerve Fibres arising in the Spinal Ganglia of the Mammal. Mr. Dale's observations were chiefly made on the cat. He finds that there are a few more medullated fibres in the trunk than in the nerve roots, the excess consisting probably of fibres which pass the trunk by way of the grey portion of the ramus communicans and end in connexion with the vessels or other tissue of the ganglion. The appearances presented by the nerves as seen in section are illustrated in a plate which accompanies the article. 4. David Fraser Harris, M.D. Glasg.: On the Pressure-filtration of Proteids. The experiments show that the commonly occurring proteids pass through the pores of a Chamberland filter in the interior of which the pressure is considerably below that of the atmosphere. Caseinogen in milk, however, and Grübler's caseinogen dissolved in lime-water do not yield pressure filtrates. 5. D. Noël Paton, M.D. Edin., J. Craufurd Dunlop, M.D. Edin., and R. S. Aitchison, M.D. Edin.: Contributions to the Study of the Metabolism of Phosphorus in the Animal Body. One of the conclusions arrived at by the authors of this article is that in the normal condition, with the animal (dog and goat) in phosphorus equilibrium, the absorption and excretion of the phosphorus by the intestine are equal. 6. John Haldane, M.D. Edin., F.R.S.: The Supposed Oxidation of Carbonic Oxide in the Living Body. 7. John Haldane, M.D. Edin., F.R.S.: On Cyanmethæmoglobin and Photomethæmoglobin. These are shown to be identical.

The Quarterly Journal of Microscopical Science. Edited by E. RAY LANKESTER, F.R.S., aided by ADAM SEDGWICK, F.R.S., and W. F. R. WELDON, F.R.S., with Lithographic Plates and Engravings on wood. London: J. & A. Churchill. New Series. No. 169. Vol. XLIII. Part 1. February, 1900. Pp. 198. Price 10*s*.—The contents of this number are—1. James P. Hill, F.L.S.: Contributions to the Embryology of the Marsupialia, parts 2 and 3, with two plates. The fœtus here described is that of the Perameles or Bandicoot, the early stages of the embryology of which are given in some detail. 2. H. M. Bernard, M.A. Cantab.: Studies in the Retina; Rods and Cones in the Frog and in some other Amphibia. In the frog Mr. Bernard finds that there are two kinds of simple cones—"the one is short without a basal vacuole, and the other about one-third longer and with a basal vacuole" which may be very much distended. Minute measurements are given of these structures and of the rods and he has satisfied himself that the cones in the amphibia are merely stages in the development of the rods, a view which, if corroborated by further research, must have important bearings upon the physiology of the retina. Some excellent drawings accompany this memoir. 3. G. S. West, B.A.: On the Sensory Pit of the Crotalinæ. This pit is situated near a line drawn from the eye to the nostril and is divided into two chambers by a thin partition, of each of which a precise description is given. The walls of the cavities are freely supplied by branches of the fifth pair of nerves and are highly vascular. No suggestion is made as to the probable use of the organ. The article is illustrated by a plate with many drawings. 4. J. W. Jenkinson, M.A. Oxon.: A Re-investigation of the Early Stages of Development of the Mouth. This is a polemic dealing with recent views on the earliest stages of the development of mammals and he remarks that the phenomena which we observe in the early ontogeny of the mammalia are, in his opinion, absolutely *sui generis*. 5. W. Blaxland Benham, D.Sc.: On the Structure of the Rostellum in Two New Species of Tapeworm from Apteryx. 6. The remaining article is on the Habits and Early Development of Cerebratulus Lacteus (Verrill), by Charles B. Wilson. The cerebratulus is a Nemertean found along the entire Atlantic coast from Florida to Massachusetts Bay at, and just above, low-water mark. They are active at high tide and are carnivorous. The memoir is accompanied by three plates with numerous drawings.

VICTORIA HOSPITAL, SWINDON. — The annual meeting of this institution was held on Feb. 10th under the presidency of Captain F. Goddard. The report showed that 225 patients had been admitted during 1899 and that there remained a favourable balance of £146. The chairman announced that he had given the land, which was said to be worth £300, for the enlargement of the hospital grounds. Captain Goddard had previously also given the site upon which the hospital stands.

THE LANCET.

LONDON: SATURDAY, FEBRUARY 24, 1900.

GREAT BRITAIN certainly has her hands full at the present moment, but we very much mistake if she will not find means of extending help to India, where a large portion of the population is affected by the famine. The calls of the war are great and will be greater. Even if fighting comes to an end sooner than we expect it to do there will be an addition to our expenditure for some time to come which will necessitate a material curtailment of our luxuries. Disabled men, fatherless children, and widows will appeal to us, as they have never done before, and we must meet the appeal more generously. But the famine in India is our concern too. The scale of it is unprecedented and it is still widening. The latest telegram from the Viceroy reports, "Famine distress still steadily on the increase," and we must listen to such a message.

It is difficult for us in England to realise the facts of these large Indian famines and the wide misery entailed. It is only three years since a famine in very much the same North-Western districts prevailed when, it is said, the hunger was so extreme that women ate their own children. (This is not an old wives' tale.) The area of the present famine is wider and the numbers affected are believed to be larger. The famine area in the former famine was three times that of the British Islands; now the area is said to be more than four times the size of these islands and the population affected to be more than 75,000,000. We may well be proud of the brightest jewel of our Imperial crown, but this feeling must be tempered with a strong admixture of responsibility. The poverty of the great mass of the Indian population, their existence on the very verge of starvation and at the mercy of the clouds of heaven, place us, their rulers, at all times *in loco parentis*: methods of help must always be ready if the people are not to be swept off the face of the earth by millions. We have long recognised this obligation to the races of India and it is not a little to the credit of our rule that the mortality from famine has been greatly reduced. The Viceroy in his last speech, pleading eloquently for the help of private generosity, calls attention to the grateful fact that actual mortality is now largely repressed. This is undoubtedly a great improvement, but short of actual mortality there is an evil that is nearly as sad for the people—viz., a physical depression that deprives life of all power and of all pleasure—that makes existence a burden and renders the half-alive subject an easy prey to disease. The British rule in India is one of the most beneficial recorded in history, but it has mightier work still to achieve in raising the physical and social condition of the people. We see from week to week the painful proofs of the persistence and growing prevalence of the plague in spite of all sanitary and medical measures, and it cannot be doubted that one chief reason of this is the inherent physical weakness of the population, due largely to poor powers of resistance, the result of inadequate nourishment. The appeal of the Viceroy must be answered generously and promptly. The real stay of the Indian Government and the real security of our hold on India is the sympathy of the people of the British Empire. The Indian peoples know of this sympathy and return it. Of all the gratifying things which qualified our grief during the opening scenes of the South African war none has been more significant than the loyalty of the Indian princes and of the Indian people. The princes have given their money and the people have given their prayers for our success. Admiration for the EMPRESS and gratitude for the beneficence of her rule have found the most practical expression. We must make it clear that these sentiments are appreciated, and that our ordinary sense of responsibility for the welfare of the teeming races of our fellow-subjects in India is much accentuated by their splendid liberality and loyalty in connexion with the war in South Africa.

There is one other fact which may well stimulate us as a Christian nation. It was pointed out by English missionaries in the Indian famine of 1897 that the Hindus were most generous in their charity towards the Famine Fund, though not 10 per cent. of those relieved were of their faith. We cannot do less than show them that our religion, too, bids us "give our bread to the hungry." Very little money goes a long way in the purchase of food in India. It is said that a penny will give a meal to a man and that half-a-crown will supply a child's food for a month, though in times of scarcity prices rise. We have not to do with a pampered population. But one word of caution seems called for here. The amount of food, or its equivalent in money, absolutely necessary to support life must not be calculated too nicely. In the famine of 1897 some of the zemindars and farmers complained that the wage given on the relief works was more than could possibly be earned in agricultural labour, and that it would tempt the people away from the country districts to the relief works. The men's daily wage was thereupon reduced from about 2*d*. to 1½*d*., and the women's from 1½*d*. to 1¼*d*. The result was that thousands of these unfortunate workers went home to die, being unable, at the famine price of grain, to keep body and soul together, much less to work. Here was failure to save life, but more is expected of England than the mere prevention of death from starvation. The Government of India is committed to that measure of relief, but help is needed to reinstate the destitute and to give them a fresh start with a brighter hope for the future. Therefore a very large sum of money is wanted, and in spite of all the urgent calls upon our resources that money must be found.

IN the social history of the nineteenth century there are few more conspicuous changes than that which is marked by the rise of the medical profession as a whole. Great physicians and surgeons there have always been who for

their prominent skill and knowledge, if not for their qualities as men of the world or of the court, have risen to be the trusted friends and advisers of the leaders of the country, but until recent times these have been the brilliant exceptions, the lustre of whose position served only to show by contrast the dull position in which their professional brothers worked. Those who practised medicine, as distinguished from surgery, were no doubt, from mediæval times onwards, in a better position, but even the physicians were thought to be entitled to small consideration. Gradually—and contemporaneously with the growth of knowledge and of respect for men working at other professions than those of the Church, the Army, and the Navy—the medical profession has attained to a certain position in the public eye, and this has been accomplished by constantly raising the standard of education required of its members, thus fitting them for the increased trust that should be earned by their increased responsibilities. A hundred years ago who would have dreamed of a surgeon holding the position now held with universal acclamation by Lord LISTER? The dreamer could have as little imagined the surgical successes that, owing to Lord LISTER'S discoveries, have become common occurrences of our everyday work.

With this general advance in the status of the medical profession there has come, partly as cause and partly as effect, a widespread desire among its members for a share in those interests and activities which used to be found only amongst our leading medical men. This is proved by glancing at the number and condition of medical societies as they were and as they are. At the beginning of the century here and there a few enthusiasts, their energies concentrated perhaps around some great physician or surgeon, banded themselves together to meet at stated intervals for the discussion of professional matters. Thus arose under the auspices of JOHN HUNTER and FORDYCE the Society for the Promotion of Medical and Surgical Knowledge, dissolved in 1818 only when it was more than adequately replaced by the Royal Medical and Chirurgical Society founded in 1805; and by the Medical Society founded in 1773. At that time such societies were to be found only in the great cities—rarely even there—and were by the difficulties of locomotion greatly limited to the quarter of the city within which the few members lived. How complete is the difference between such a state of affairs and that which obtains to-day. In London it would tax the memory of the medical resident to reckon up the medical and surgical societies that are flourishing around him, while every large town in the kingdom has its two or three such associations, and no suburb or provincial district is without at least one rallying point for local practitioners of medicine.

The value of such institutions is scarcely to be overrated, particularly their value to the general practitioner. Everyone in the course of his practice comes sooner or later upon cases which leave him in doubt even after the most careful observation and deliberate reflection. If the patient is wealthy it is easy enough for his medical attendant to recognise that "two heads are better than one," and to call in the opinion of some one who from greater experience or more special attention to just the class of case in question is likely to throw light upon the matter. Suppose, however, the patient cannot afford the expense of a further opinion, and yet is not suitable or does not wish for hospital treatment. To bring such cases before the local medical society is a ready help to the medical man and a useful course for his patient. Not only is the medical man in charge almost certain to profit by the new points of view from which his fellows will see the case, but also the mere fact that he has to present the case to them in a clear, comprehensive and comprehensible manner causes him to think over signs and symptoms afresh from the beginning, when he will definitely formulate his opinions in the matter in a way which he may not have been led to do before. But for medical societies to be of the fullest use there is one condition to be observed; the meetings must be those of equals with equals. If a man is overshadowed by the presence of many whose knowledge and opportunities are greater than his own, he will fear to expose his comparative weakness; he will get into the way of going only to listen, and he will never reap the benefits that medical societies should afford to all their members. For perhaps their greatest benefit of all is the practice that medical societies afford to their members in the art of public speaking, an art which no medical man should be without, though one in which he has little chance of improving himself except at these meetings. It is not sufficient to know, a medical man to be truly useful to his fellows should be able to impart his knowledge. Again, it is a great thing to feel the value of good advice, but good advice cannot be obtained unless the points of difficulty are succinctly stated. We regard the activity that is now displayed in the provinces in the founding of medical societies of excellent omen for the medical profession. Properly treated these societies should form not only exchanges of professional knowledge but centres of professional *esprit de corps*.

UP to noon on Wednesday last we had received answers from 6299 English practitioners in answer to our three questions: (1) Are you in favour of legislation for the regulation of the practice of midwives? (2) Are you in favour of the Bill now before the House of Commons? (3) Are you indifferent in the matter? This figure represents of course not quite one-third of the constituency to which we appealed and we may fairly expect to receive many more replies. At the same time enough answers have been sent to us to show clearly what is the view of the medical profession, for we may take it for granted that the one-third or so who have replied are fairly representative of the whole number in their views. 1817 English medical men, then, consider that no legislation is required for the regulation of the practice of midwives, and of these 1530 add that they are opposed also to the Bill now brought before the House of Commons by Mr. TATTON EGERTON. 121 medical men are opposed to Mr. TATTON EGERTON'S Bill but do not state whether they are opposed to legislation generally. 1323 are opposed to the Bill, while they desire to see legislation for putting down many of the practices now in vogue among unqualified persons as a

consequence of the somewhat ineffective operation of the existing Medical Acts. These medical men desire legislation, but legislation of an opposite sort to that offered to them by the Midwives Bill. 433 medical men are in favour of legislation for the regulation of the practice of midwives but not in favour of the Bill now before the House of Commons. 1311 medical men are in favour both of legislation for the regulation of the practice of midwives and of the specific Bill. 698 medical men did not content themselves with simply saying "Yes" or "No" to the questions, but wrote letters explaining their views. We have submitted their replies to a somewhat rough analysis. 445 were opposed either totally or in detail to Mr. TATTON EGERTON'S Bill, while 143 were more or less in favour of it, and the remainder could not be classified. 596 medical men frankly expressed themselves as indifferent to the whole matter. By our poll of the profession, as far as it has gone, we have accumulated great knowledge of what English medical men really think on the question in general, but at the present time the particular Bill before the House is all that we are concerned with. It will be seen that of 6299 medical men who have expressed their views to us 1311 only are in favour of the Bill. These figures cannot be without their influence in the House of Commons, but before the Bill is read a second time we hope that we shall be able to place before the legislature the opinion of a larger proportion of the medical profession in the country. We repeat our request for replies to our circular letter, which should reach us absolutely not later than Monday next, Feb. 26th.

Annotations.

"Ne quid nimis.'

THE STATUTES OF THE RECONSTITUTED UNIVERSITY OF LONDON.

THE statutes recommended by the Commissioners under the University of London Act, 1898, have been laid before both Houses of Parliament and will remain there for 40 days previously to their becoming legal enactments. Opposition will be no longer offered to the formation of a great metropolitan university in London, although this desirable idea has been so persistently dogged by narrow and sectarian opposition in former years. We still hesitate as to the practicability of two schemes running side by side for internal or collegiate students on the one hand and for non-collegiate students on the other; but at any rate the two classes are to be placed under different jurisdictions. The authoritative power in the new University will be the Senate of 56 persons (all told), but the really influencing body will be the Academic Council of 20. Their function is advisory only, but we cannot fail to see that this council must materially influence every decision of the Senate, at least so far as the education and examination of internal students are concerned. The external students in arts, science, and laws will be educated anyhow and anywhere, but will pass examinations on lines mainly laid down by the 16 members of the Senate appointed by Convocation. The statutes say that the Senate, while prescribing courses of study for internal students, will ensure in each case an academic training of adequate breadth and duration, and will endeavour to allow the students a wide option in the choice of study. We are anxious to see how the Senate will reconcile this assurance with the expressed intention that degrees conferred upon internal and external classes of students shall represent as far as possible the same standard of knowledge. Fortunately there are no stringent provisions as to the education or examination of the medical students, and powers are granted to the Senate to make arrangements with the Royal College of Physicians of London and the Royal College of Surgeons of England, or either of them, to conduct jointly with the Senate examinations in such portions of the subjects included in the course of study for a medical degree as may be agreed upon between the Senate and those Colleges. The Senate can make similar arrangements with other corporations and institutions holding professional examinations in subjects included in other courses of study, and we hope to hear less in the future of unnecessary examinations and re-examinations.

THE LAW OF THE COMPOUNDED DRUG.

A RECENT appeal in a case under the Sale of Food and Drugs Act of 1875 is of interest, not only because the purity of drugs sold is a matter of public importance but also on account of the manner in which the difficulty arose. This difficulty, it may be said at once, was one for which the legislature is primarily responsible. It must in the case now referred to and in others have caused avoidable expense, and it might have been removed many years ago. A person had been prosecuted under the 6th section of the Act for selling as camphorated oil that which contained a less proportion of camphor than is prescribed by the British Pharmacopœia. The 6th section of the Act runs as follows:—"§ 6. No person shall sell to the prejudice of the purchaser any article of food or any drug which is not of the nature, substance, and quality of the article demanded by such purchaser, under a penalty not exceeding twenty pounds. Provided that an offence shall not be deemed to be committed under this section in the following cases; that is to say ..... (3) where the food or drug is compounded as in this Act mentioned." The seller of the camphorated oil had succeeded in convincing the magistrate that he came within the exception quoted and that the summons against him should have been not under the 6th section but under the 7th section of the Act, the only other section in which mention is made of compounded drugs. This section runs as follows: "§ 7. No person shall sell any compound article of food or compounded drug which is not composed of ingredients in accordance with the demand of the purchaser under a penalty not exceeding twenty pounds." It will at once strike anyone reading this section that it must have been intended to refer to cases where the prescriptions of medical men are presented to be made up, and this view is, no doubt, the correct one. In the case under consideration the Divisional Court decided that the prosecution had been properly instituted, as whatever meaning section 6 sub-section (3) might bear with relation to section 7, the offence before them was equally within section 6. The judges seem, at all events, to have found a way out of a difficulty with some ingenuity. The true meaning of sub-section (3), quoted above, was suggested to their lordships, but they pointed out that although it seemed pretty clear from the obvious construction of the sections that something had been omitted they could not take cognisance of extraneous information with regard to this. As a matter of fact, when the original Bill left the House of Commons it contained a section which ordered that all compounded drugs sold should be combined

in the proportions prescribed in the British Pharmacopœia. The House of Lords struck out this section but omitted to strike out the sub-section (3) which referred to it, and to it alone, so that sub-section (3) was consequently left with no meaning until a strained one was sought to be found for it by bringing it into relation with section 7. When we add that the case of White *v.* Bywater[1] in 1887 decided that a customer who had asked for tincture of opium was entitled under the Foods and Drugs Act to have it sold to him of the standard provided by the Pharmacopœia, it will be seen that the interference of the House of Lords with the Act was, in this detail at all events, not attended with happy results. It is also a matter for regret that the legislative machine should be so cumbrous as not to be able to correct quickly and easily mistakes made in its output. That draftsmen should occasionally make slips is not to be wondered at, particularly when we consider the unwieldy, complicated, and often unintelligible system that has grown up of legislating by means of cross references to other Acts already in existence. This system once had as a result a somewhat quaint mistake. In the Destructive Insects Act of 1877, framed hurriedly to protect the agriculturist against the ravages of the Colorado beetle, there are sections which for the purpose of certain matters of procedure incorporate the Contagious Diseases (Animals) Act, 1869, by name. As is usual the numerical description of the Act is given in the margin. It should have been 32 & 33 Vict. cap. 70, but there were two Contagious Diseases Acts passed in 1869, one of which referred to the lower animals while the other did not, and the draftsman by mistake took the wrong one. Consequently if anyone turns to an original copy of the Destructive Insects Act he will find marginal reference to 32 & 33 Vict. cap. 96, the presumable effect of which, if it were literally carried out, would be to subject the Colorado beetle to periodical medical examination by a visiting surgeon, with the possibility of detention in a certified hospital. We believe that in later editions of the Act this slip was summarily corrected. The alteration of the Food and Drugs Act would presumably require an Act of Parliament.

APPLIED SCIENCE IN MODERN WAR.

ONE of the notable circumstances connected with the present war in South Africa has been the wide and varied application of the results of modern science in regard to it. Setting aside altogether those of a purely military character, such as arms of precision and rifled and quick-firing guns, the use of which has demonstrated the enormous advantages they are capable of conferring in defensive warfare, there are many other directions in which the influence of applied science may be recognised. We perform nowadays much of our scouting by balloons and transmit the result of observations obtained from an altitude and supplemented by the aid of field-glasses to troops advancing or operating on the field of battle. The best telescopes and an abundance of field-glasses are always in requisition; the latter may be said to form an essential in the list of personal field equipment. By means of wireless telegraphy and with the aid of kites communication has been successfully established between various stations occupied by British troops in the theatre of war in Africa. As regards our sanitary and medical services, a stricter application of the rules of practical hygiene has been attended with a remarkably progressive improvement in the health of our soldiers in the field in the successive expeditions which have taken place since the time of the Crimean war. Infective wound diseases, which used in past times to prove a veritable scourge among our wounded in military hospitals, have been practically banished from them by universal and scrupulous attention to cleanliness, by the rigid use of antiseptic dressings in wounds and injuries, and by the performance of all operations upon patients under anæsthesia; while the use of the Roentgen rays has enabled us to detect the presence and exact site of any missile or foreign body. The various ingenious probes for the detection of bullets embedded in the tissues are no longer seen in military surgery but have been relegated to the surgical museum among other relics of past art. And these are only a few of the innovations for which applied science is responsible.

[1] 19 Q. B. D. 582.

THE FERTILITY AND STERILITY OF NATIONS.

THE relative fertility of different nations and races is a problem which, despite its all-absorbing interest, has hardly received at the hands of science the attention it deserves, and although the passing away of nations and of races is a matter of history, but little inquiry has, as far as we are aware, been directed towards determining the causes which in one or another instance have been instrumental in making for the decay of reproduction. As with families so with nations, fecundity is in the long run the factor which maintains their more or less indefinite survival. In the cases in which aborigines have been brought into contact with highly civilised nations a diminished fertility has apparently accounted for the disappearance of the natives, and the now vanished Tasmanians and the rapidly fading Australian aborigines may be quoted as instances in point. So, too, with the Maoris of New Zealand there would appear to be indications that in contact with a European people they cannot flourish. Amongst, however, civilised nations limitations to their increase would seem to be brought about by the indirect effects of social and economical forces resulting in postponement of marriage until a relatively later period, by an unwillingness to undertake the responsibilities of parentage, and by other complications in the social system of a nation all making towards national sterility. An article by Dr. Drouineau in the current number of the *Revue d'Hygiène et de Police Sanitaire* based upon the recent report of M. Fontaine, the director of the French Office of Works, is full of interesting information on the fecundity of France. During 1898 the birth-rate of France was 22·1 per 1000, as against a rate of 22·4 for 1897, while the death-rate for 1898 was 21·2 per 1000, in place of 19·6 for the preceding year. There is, in fact, as Dr. Drouineau points out, a marked tendency at the present time in France for the curve representing the birth-rate to meet the curve representing the death-rate, the former falling, the latter rising, and although during 1898 there was an actual excess of 33.860 births over deaths the author of this paper views the future with no little disquietude. When, too, the figures for the several departments are gone into it transpires that during 1898 there was an excess of deaths over births in no less than 48 departments and an excess of births in only 39 departments, the departments presenting this excess of deaths remaining the same year after year. In 1898 there were nine departments in which the birth-rates exceeded those of the previous year while in 10 the rates remained stationary. Amongst those departments which yielded the highest birth-rates during 1897 there was a marked falling off in 1898, a phenomenon, as the author points out, of particular gravity. If, he says, the fecundity of these departments becomes feebler year by year the results will be disastrous, more particularly if, as is the case, the mortality remains relatively high. The birth-rate exceeded 23 per 1000 in 22 departments and was below that figure in 21 departments, and, as regards these latter 21, we note that the rates ranged between 18·9 to 14·5 per 1000. In 13 departments the death-rate was above 23 per 1000, the

highest being 25·4, while among those departments of small mortality the rates ranged from 18·9 to 15·8 per 1000. The influence which immigration may exert in maintaining the population of France has not as yet been fully determined, but it is clear that Dr. Drouineau suspects that this immigration may be a by no means unimportant factor in maintaining the balances still existing. An examination of the figures for the decennial period 1889-1898 leads much to the same conclusions as those for 1898 alone, and a map which accompanies Dr. Drouineau's paper illustrates graphically the departments in which this decay of population has set in, and shows also that in Brittany something of the pristine vigour still obtains. Furthermore when the statistics of the years 1879-1888 are compared with those for 1889-1898 the same story of diminishing increase has to be told, and in the truly eloquent words of Dr. Drouineau: "De période en période cet excédent diminue, les départements à excédent mortuaire augmentent, ce sombre voile de deuil et de ruine s'étend sur le territoire, en même temps qu'il devient plus opaque, plus épais." Are the people of France, he asks, to regard the situation as normal? Has the disease been discovered without the remedy? Or is it necessary to await the experience of yet another decade before the forces at work are inquired into and the causes, if possible, remedied? The French are reminded that the State quite recently voted large sums to place France in a position to resist plague, and the question is asked whether this slow and progressive ruin is less worthy of attention than plague or cholera. This question of the fecundity of races is touched upon by a Dutch writer in the February number of the *Revue des Deux Mondes*. Referring to the remarkable fecundity of the Boer women he urges that even if the arms of England are eventually victorious and the South African Republics come beneath the English flag, the future belongs to the Boer. In less than a century, he tells his readers, the Boers, thanks to their marvellous fecundity, have increased from 60,000 to half a million. In the century which now dawns they will increase, he says in his peroration, to three, four, or five millions, and South Africa will be theirs.

SUBDURAL HÆMORRHAGE FOLLOWED BY LOSS OF ABILITY TO NAME OBJECTS.

DR. GRAEME M. HAMMOND of New York records[1] the following interesting case bearing on the presence of a centre in the cerebral cortex where auditory memories of words are stored. A young man, aged 25 years, clerk, free from syphilis and of temperate habits, had suffered for some months from albuminuria with granular casts. During a street fight he was struck on the left temple with a loaded whip-handle. He was knocked down but did not lose consciousness and was able to get up and to walk home, though a few days later he was seized with an attack of general convulsions of a severe and prolonged character. When he regained consciousness it was observed that he had completely lost the ability to name objects and persons. There were no disorders of smell, taste, vision, or hearing during clinical examination. There was no motor paralysis or derangement of sensibility. There was neither word-blindness nor incapacity for uttering words. "He could talk and voluntarily say all words except the names of objects and persons. He could say his own name easily and did so whenever asked to. He readily recognised all objects he saw and indicated by appropriate gestures that he understood what they were and what they were used for, but he could not say the name of a single one even when he was told what the name was." When told to describe how he got hurt he said: "I was struck on the—yes, sir—here, sir (pointing to his head), by (after an attempt to remember the name of the person who struck him) an acquaintance. He hit me with a—(here a pantomime illustrating the size of the implement which he was struck with)." When told to write such words as "cat" and "horse," he wrote "crat" and "heort." He also made errors when told to say or write the alphabet. Ophthalmoscopic examination showed the disc to be slightly choked in the right eye. The diagnosis was subdural hæmorrhage over the posterior part of the left superior temporal convolution. An operation was performed by Dr. Seneca Powell two weeks after the injury. A linear fracture was found in the left temporal bone and a subdural blood-clot was present covering the entire superior temporal gyrus. In the posterior part there was a hole into which a probe could be passed one and a half inches into the gyrus, at the junction of the middle and posterior parts of the convolution. The cerebral tissue was lacerated here, probably by indirect violence, as this point was two and a half inches posterior to the site of the superficial injury produced by the blow. The patient made a good recovery after the operation and at the end of a week began to make successful attempts to pronounce names. "At first the sounds he uttered, while wrong, bore a decided resemblance to the word he desired to say. Later he acquired greater accuracy and now is able to recall the memory of the names of many objects and people." Dr. Hammond concludes by observing that while the conception of a word often depends upon the simultaneous combination of several perceptions, any interference with one or more of these perceptions may prevent the conception of a name. Nevertheless there must be a distinct centre in the cerebral hemisphere which retains name memories. This centre forms the nucleus, as it were, of the larger auditory centre. Its topographical position probably varies in different brains.

[1] Journal of Nervous and Mental Disease, December, 1899.

SLEEPING OUT OF DOORS FOR PHTHISICAL PATIENTS.

IN a paper read before the Medical and Chirurgical Faculty of Maryland and published in the January number of the *Maryland Medical Journal* Dr. C. S. Millet of Brockton, Massachusetts, describes the effects of sleeping out of doors as observed in five cases of phthisis. At the outset he remarks that the New England climate has a national reputation for insalubrity, variability, and bleak east winds, and it was with patients living in this region within a few miles of the ocean on a flat, low-lying country that he had to deal. Nearly two years ago he was called to see a young man who was suffering from cough, wheezing, and dyspnœa, and had a temperature of 100·5° F. Throughout that winter he became worse until in the spring he had lost nearly 15 lb. and was so weak that he could not bring in a hod of coal without extreme shortness of breath. In May, 1898, incipient phthisis was diagnosed; the family history was also extremely phthisical. Dr. Millet then urged him to try sleeping out of doors. He began on the last day of June, 1898, and slept with no awning or roof over his head for five consecutive months, with the exception of only nine nights when rainy weather prevented. Within the first two weeks it could be seen that he was making progress in the right direction. At the end of a month his temperature was normal and his cough and wheezing had almost disappeared. In November, 1898, he weighed 144 lb., having gained 22 lb. in four months. The only medicine which he took was tincture of nux vomica. He has continued perfectly well ever since and now weighs 147 lb. His sleeping-place had a south-west exposure. A photograph of it shows that it was a platform supported by brackets and posts outside the first-floor windows of a small house and sheltered on two sides, being in the corner formed by a projecting part of

the building. The man worked in a shoe factory nine hours a day without the loss of a day since his treatment began. While sleeping out of doors he wore a soft felt hat and cotton nightshirt and was covered with the ordinary bedclothes. He usually went to bed early, at 9 P.M., because the sun awakened him early in the morning. Four other photographs show similar sleeping-places used by four other patients. One was a man, aged 64 years, who had slept upon the platform since July and had gained 11 lb. Another was a boy, aged 12 years, in whom the amount of lung-tissue involved was too extensive to justify the expectation of permanent arrest, but he gained 19½ lb. during the summer. His mother slept at night on another cot beside him, and herself gained very decidedly in weight, strength, and colour. Another patient gained 12 lb. and the physical signs nearly all disappeared. As a matter of experiment Dr. Millet himself has slept and at the date of his paper (Nov. 14th, 1899) was sleeping on a roof-garden, and he says, "Until you have tried it yourself you cannot know how much more refreshed one feels after a night's rest out of doors." No particular kinds of bedclothing were used provided that the sleepers were warm, and during the cooler months some of them, therefore, found it necessary to use woollen nightgowns and sheets. Many times they found their bedcoverings and night-clothes wet with dew, and once in a while a summer's rain disturbed their slumbers but with no harm beyond the necessity of drying the coverings before next bedtime.

A CASE OF ENTERIC FEVER IN A TUBERCULOUS SUBJECT: NEGATIVE SERO-DIAGNOSIS.

THE case of which the following is an abridgment will be found reported *in extenso* in the *Archives de Médecine et de Pharmacie Militaires* for January, 1900, by Dr. E. J. Debrie, Medecin-Major de 1re Classe. An infantry soldier, whose military medical history included chorea, bronchitis, and on two occasions hæmoptysis, was admitted to hospital on Jan. 19th, 1899, on account of nocturnal incontinence of urine, an affection from which he was said to have suffered during boyhood. On admission a note was entered to the effect that the patient was emaciated and of poor physique, with abbreviation of the respiratory murmur in the apex of the right lung, while on the left side the cardiac sounds were unduly prolonged upwards. In order that the patient might be awakened every second hour he was placed in a bed adjoining that of an enteric fever patient, an artilleryman, whose condition was thought grave enough to necessitate constant watching. On March 3rd the gunner died and on the 13th of the same month the other patient began to show signs of gastro-enteric disturbance, his evening temperature being 102·2° F. He was immediately placed on low diet and ordered 30 grammes of sulphate of magnesia. On March 14th his evening temperature was still 102·2° and there were signs of pulmonary congestion, especially on the right side, but with regard to his heart and abdomen the symptoms were negative. Henceforward the notes ran as follows: March 19th.—Since the last report two grammes of antipyrin have been administered daily, but in spite of this the temperature is unchanged. The abdomen is now found to be slightly tense and gurgling can readily be made out in the right iliac fossa. He coughs frequently; and on auscultation moist râles are to be heard in the lower lobes of both lungs. The heart sounds are normal. March 23rd.—The temperature has risen to 104°, the abdomen is greatly swollen, and a profuse eruption of rose-coloured spots has made its appearance. These signs, together with the dry tongue and pulmonary congestion, seem to point to typhoid fever, but owing to the absence of diarrhœa and stupor and also to the fact that an epidemic of influenza is prevalent the diagnosis cannot be definitely settled. The cold-bath system of treatment is nevertheless deemed expedient pending a report from the laboratory at Lyons where a specimen of the patient's blood has been sent for examination. March 30th.—*The sero-diagnostic test gave negative results.* In spite of the cold bathing, which has been strictly carried out, the patient's temperature has scarcely varied, remaining constantly at about 104°. The typhoid fever signs have also become accentuated, diarrhœa and stupor have both set in, and the pulmonary congestion now manifests itself by sibilant râles over both lungs. April 2nd.—Owing to the severity of the pulmonary complication, and in view of the negative report from Lyons, the cold baths were stopped. The patient is to be given four grammes of antipyrin daily instead of two. April 3rd.—At the patient's earnest request the administration of the cold baths is resumed. The symptoms of typhoid fever have become plainer. A fresh crop of rose-coloured spots has appeared, the abdomen is more tense than at first, the spleen is enlarged, and the diarrhœa has become profuse. Specimens of blood and sputum were sent to Lyons. April 5th.—The general condition has changed greatly for the worse, the emaciation being extreme, while in spite of everything that can be done the temperature remains at or about 104°. At night the patient is delirious and in the daytime he trembles continually. The pulse is 130, but the heart sounds are well defined. April 7th.—The patient died at about half an hour from midnight, the symptoms towards the end being those of asphyxia, with delirium and nervous excitement. Two days afterwards the second report from Lyons (sent on April 3rd) was received. It was to the following effect: "The bacilli of Koch were present in very large numbers in the sputum. *Sero-reaction negative.*" A necropsy was performed 30 hours after death, when numerous ulcerations absolutely characteristic of typhoid fever were found in the ileum. The large intestine likewise contained ulcers, but here the exact nature of the lesions was doubtful. Dysentery could at once be eliminated, but the writer is unable to say positively whether he had to do with typhoid ulcerations or with a tuberculous condition. In order to decide the point he wished to invoke the aid of the microscope and to that end portions of intestine were sent to the laboratory for investigation. Unfortunately, however, putrefaction had set in and no reliable conclusions could be drawn. In the case of the artillery soldier beside whose bed the unfortunate patient was placed the nature of the disease (which at first was unrecognised) was announced by the serum test while the patient was *in extremis*, and the diagnosis was fully confirmed by the post-mortem examination.

THE PUBLIC HEALTH OF NANTWICH.

THE small country town of Nantwich is fortunate enough to number among her sons Mr. Baldwin Latham, the well-known sanitary engineer, and as occasion has arisen he has always very good-naturedly placed his services at the disposal of the governing body of the town. Most towns of the size of Nantwich—its population is under 8000—would think themselves extremely fortunate to be able to command the gratuitous services of so eminent an adviser as Mr. Latham. The Nantwich District Council evidently think that he is to be congratulated upon being permitted to advise such an authority, for when his report was recently read upon schemes to provide for the proper disposal of the sewage of the town involving an outlay in one case of £10,000 and in the other of £15,000 it was treated with but scant courtesy, and when one member suggested that the report should at any rate be printed in order that its

details might be thoroughly understood, another councillor objected because it would involve "considerable cost" and proposed that "abstracts only" should be printed. Eventually it was decided to hold a special meeting of the council to consider the report and the clerk was instructed to obtain estimates for printing 100 copies of the report. In the event of the council deciding to incur the "considerable cost" involved it would not be amiss to add as an appendix to the document a few statements culled from the last annual report of the medical officer of health of Cheshire, such as: "The river Weaver is still seriously polluted by the sewage of the town of Nantwich," "the death-rate at Nantwich in 1898 from all causes was 20 per 1000 and from zymotic diseases 2·2 per 1000, the mean death-rates for the previous six years being 19·6 and 2·4 respectively." The dissemination of such facts would absolve the Nantwich District Council from the charge of any extravagance in the matter of printing.

THE CHAIR OF PRACTICE OF PHYSIC IN THE UNIVERSITY OF EDINBURGH.

THE lamented death of Sir T. Grainger Stewart creates a vacancy in the Professorship of Practice of Physic and Clinical Medicine in the University of Edinburgh. It need not be said that this professorship is one of the most coveted academical positions in Great Britain; it confers good opportunities for teaching, the emolument is good, and it generally carries with it in Scotland great advantage and distinction in consulting practice. To fill the chair of Medicine at Edinburgh can never be other than an object of honourable rivalry with the best teachers. It would be premature at present to indicate any sense of preference for the candidates from whom the curators will have the great responsibility of choosing. Among the gentlemen spoken of as likely to be candidates are Dr. Byrom Bramwell, Dr. John Wyllie, Dr. George Alexander Gibson, Dr. Alexander James, and Dr. Robert Alexander Fleming. We believe also that Professor Osler would come from Baltimore if the chair were offered to him. His appointment would no doubt be an excellent one, for the erudition, eloquence, and practical knowledge of the learned Canadian, who is a Fellow of the Royal Society and the Royal College of Physicians of London and a Professor in an American University, are known to all.

AN UNUSUAL CASE OF LEAD-PARALYSIS.

DR. B. ONUF reported a case of the above at the New York Neurological Society on Jan. 2nd which has features of special interest. The case is that of a man, aged 37 years, and by occupation a painter. He had had one attack of lead colic some years ago. Both family and personal history were good. A short time ago he had a severe fall and for several days after this he appeared to be dazed and confused. From March till August, 1899, he suffered severely from colic and had done no painting; then he had resumed his occupation and was at work with paints containing a large proportion of lead. At the end of August he had become quite ill and unfit for work and in three or four days he developed paraplegia and was put into bed in a helpless condition. His left arm also showed a considerable diminution of power. He was then removed to St. Catherine's Hospital in September. On admission to hospital there was found a complete flaccid paralysis of both the lower extremities. The knee-jerks were absent and there was marked tenderness of the nerve-trunks and muscles of the legs. A paralysis of the flexor muscles of the left arm and of the extensors of the fingers was also noticed and a "blue line" was present in the gums. He was put under treatment and diaphoretic remedies were administered. The pain and tenderness in the limbs diminished, but a more serious symptom—viz., dyspnœa—now supervened. On Oct. 4th he had a severe attack of dyspnœa and on the following morning he had another and similar attack in the course of which he died. The necropsy revealed the following interesting conditions. The flexors and extensors of the right arm were found to be atrophied and wasted, as were also the peroneal muscles and the flexors of the thigh. The left lung was the seat of broncho-pneumonia. The spinal cord showed poliomyelitis of the anterior cornua. At the second and fifth lumbar segments there was an intense degree of infiltration of the walls of the blood-vessels with small round cells. The infiltration had been so extensive as partially to destroy and quite alter the appearance of the nerve-cells in the grey substance. The anterior spinal roots were markedly involved and showed evidences of degeneration, but the posterior lumbar roots appeared to be normal. The plantar nerve showed an increase of connective tissue and its vessels gave evidence of endarteritis obliterans. The liver was set aside and was subsequently examined by Dr. J. Bookman for lead, but none could be found. Dr. Onuf points out that as five weeks had elapsed since the patient had left off using paints the absence of lead in the liver was not to be wondered at.

THE COMMITTEES OF THE GENERAL MEDICAL COUNCIL.

VARIOUS committees of the General Medical Council have been summoned for next week. The Executive Committee is summoned for Monday, Feb. 26th; the Penal Cases Committee for Tuesday, the 27th; and the Medical Aid Associations Committee for Wednesday, the 28th. The Executive Committee will not be complete; Mr. Brudenell Carter being no longer a member of the Council, his place will be vacant. Clause 5 of Standing Order VII. runs as follows:—

"Should there occur during the recess any vacancy in the Executive Committee, they [the committee] shall be empowered to fill up such vacancy except in cases where a summons has been issued for a meeting of the General Council, when the Council itself shall elect."

It remains to be seen whether the Executive Committee will think it necessary under this by-law to anticipate the annual election of their body, which takes place in May. The terms of the clause seem to contemplate such action, and it is the more necessary as there will be another meeting of the Executive Committee before the meeting of the General Medical Council.

THE TREATMENT OF EPILEPSY BY BROMIDES AND DIMINUTION IN THE INGESTION OF CHLORIDES.

Dr. Ch. Richet and Dr. Ed. Toulouse have recently brought before the Académie des Sciences in Paris a very ingenious modification of the bromide treatment of epilepsy which has given good results. At the meeting of the Société Médicale des Hôpitaux on Jan. 12th Dr. Toulouse returned to the subject. The idea occurred to him that privation of chlorides would produce increased attraction of the cells for similar salts—bromides—and would therefore intensify their action. The results justified the hypothesis. About 14 grammes (210 grains) of chloride of sodium are consumed daily by normal persons under normal conditions, but this quantity is not necessary to the economy, and according to some observers it is even injurious as the kidneys are overworked in its elimination. Dr. Toulouse reduced the quantity of chloride of sodium consumed by his patients to two grammes (30 grains) a day by putting them on the following diet: milk, 1000 grammes (35 ounces);

beef, 300 grammes (10 ounces); potatoes, 300 grammes (10 ounces); flour, 200 grammes (seven ounces); sugar, 50 grammes (one and three-quarter ounces); coffee, 10 grammes (154 grains); and butter, 40 grammes (one and a half ounces nearly). The food was given in the following form. At 7 A.M., nine ounces of milk; at 11 A.M., two pancakes made with eggs, flour, milk, and sugar, and coffee; at 3 P.M., pap made with flour and sugar diluted with milk; at 5 P.M., broth, boiled beef, and potatoes roasted with butter—all without salt. The remainder of the milk was drunk with water. The patients were inmates of an asylum and the subjects of frequent epileptic fits. Bromide of sodium in daily doses of about 50 grains was given to nine patients. On ordinary diet an average of 9·54 fits occurred in 10 days, but in the patients on the diet described the average fell to 1·16—a diminution of 87 per cent. The value of the treatment was confirmed by the fact that the attacks returned when ordinary diet was resumed although the bromide treatment was continued. Whether the prolonged use of this method produces any permanent effect on the disease was not determined. The regimen alone could not explain the effect, for when bromide was not given it produced no benefit. Dr. Toulouse thinks that possibly good results may be obtained in a simpler manner—by removing salt from the ordinary diet and taking into account the quantity contained in bread. This principle of modifying the nutrition of the organism so as to render it more susceptible to the action of a remedy, which Dr. Toulouse terms "*thérapeutique métatrophique*," presents a wide field of application and possibly of utility. For example, the action of iodides in syphilis might be increased by diminution of the chlorides in the system. It also presents a wide field for errors.

PRODROMAL RASHES IN MEASLES.

THE question of prodromal rashes in measles does not appear to be even entertained in English works. An important article entitled "Sur quelques Érythèmes Prémorbilleux" has been published in *La France Médicale* of Dec. 22nd, 1899, by Dr. E. Deschamps. Professor Henoch appears to have first drawn attention to the subject. He states that "the skin in the prodromal stage usually shows no morbid phenomena; very small rose papules and exceptionally a fugitive erythema are rarely observed on the face." He relates the case of a child, aged two years, in which cough and pyrexia suddenly appeared with diffuse redness of the face and chest. On the next day the redness had disappeared and there were broncho-pneumonia and severe diarrhœa. In the night of the third day the eruption of measles appeared. Some years later Talamon published the case of a boy, aged 10 years, in which during the period of invasion urticarial erythema supervened.[1] In the following year Surmont saw a child, aged three and a half years, with an urticarial eruption which preceded by one and a half days the eruption of measles.[2] But the first systematic work on the subject is the thesis of Dr. G. Robet published in 1896. He observed six cases at the Hôpital des Enfants Malades, Paris. Out of the 10 cases to which he refers, in three the rash was scarlatiniform, in three urticarial, in one morbilliform, and in two it was red miliaria. Dr. Deschamps relates seven cases of which some were personal observations and others were reported to him. The following is an example of the former. A boy, aged 12 years, had a bad sore-throat; the pharynx and tonsils (which were very large) were red and ecchymotic. The face, hands, and wrists were very red and there was a scarlatiniform rash on the forearms and legs. The temperature was 98·3° F. in the morning and 101·5° in the evening. On the following day the fever had disappeared. The throat became paler and the rash disappeared in 48 hours. But the fever re-appeared on the third day when there was also diarrhœa. On the fourth day the child complained of his throat and sneezed and his eyes became red, and in the evening the eruption of measles appeared. The prodromal rash of measles usually appears four or five days before the true eruption—at the onset of the period of invasion. Prodromal rashes occur especially in measles and in rubella, more rarely in diphtheria, pneumonia, scarlet fever, varicella, and whooping-cough. The rash is a fugitive erythema; in some cases it lasts from 24 to 36 hours, rarely more than three days. In many cases it is scarlatiniform and in others it resembles measles, but the face is exempt and there is no conjunctivitis. The temperature is generally not affected by the rash, but the child is generally apathetic and without appetite. As to the pathology, Dr. Deschamps argues that it is due to streptococcic or other infection. For in a number of cases sore-throat, digestive troubles and diarrhœa have been observed, and in the mucous secretions in measles streptococci and pneumococci have been found. Probably the infection of measles increases the virulence of the associated microbes. The prognosis does not appear to be affected by these prodromal rashes. On the contrary, certain cases observed by M. Hutinel in which erythemata supervened during the eruptive or convalescent periods of measles were usually fatal.[3]

[1] Médecine Moderne, 1890.
[2] Société de Medecine du Nord, 1891.
[3] Archives Générales de Médecine, 1892.

GRANTS IN AID OF SCIENTIFIC RESEARCH IN DENTISTRY.

THE Odontological Society of Great Britain is to be heartily congratulated upon the step it has recently taken in instituting grants in aid of scientific research in connexion with dentistry. In recent years the value of scientific research in dentistry has steadily gained ground and there is little doubt that in the future progress will depend more upon the results of patient experimental research than upon mere clinical observation. In dentistry many fields for research are open to the investigator and there is ample room, not only for the histologist and pathologist, but also for the chemist and metallurgist. The society has sent us a list of the regulations in connexion with these grants. Briefly they are as follows: (1) the grants will be only given in aid of work in connexion with dentistry; (2) where the grants cover the whole expense of inquiry the result of the investigations becomes the property of the Odontological Society; and (3) that all apparatus purchased with the grant shall be the property of the society. The Council is open to receive applications for grants and full particulars can be obtained from the honorary secretary of the society at 40, Leicester-square, W.C.

THE LATE SIR W. D. GEDDES, PRINCIPAL OF ABERDEEN UNIVERSITY.

DISTINGUISHED as a classical scholar and not less as an academic administrator, Sir W. D. Geddes, by his sudden death, leaves Aberdeen, and the whole cause of professional education, "a man the poorer." In the literary sphere he will long be remembered for his prelections, academic and popular, for his masterly commentary on the "Phædo" of Plato, for his profoundly suggestive contributions to the Homeric controversy, and for his edition, in two volumes quarto, of the Latin poems of Arthur Johnston, physician to King Charles I., and known to the Europe of the seventeenth and eighteenth centuries as the "Medical Ovid." It is his work, however, in university extension that more particularly interests the profession—work begun in 1885 when he became principal of Aberdeen University—work, moreover, carried on in spite of difficulties

often seemingly insuperable, till almost within sight of the goal. By his untimely death he bequeaths to others the consummation he had most at heart—to make the northern school complete in every department of academic, especially medical, culture and qualification. Even as it is the teaching of medicine is under deep obligations to his enlightened recognition of its requirements, preliminary, scientific, and clinical, and Aberdeen will owe it largely to him if she reinforces the profession with scholars and consultants equal in the coming generation to the Adamses and Kilgours of the past.

THE CONGRESS OF INTERNAL MEDICINE.

THE eighteenth Congress of Internal Medicine will be held at Wiesbaden from April 18th to 21st under the presidency of Professor von Jaksch of Prague. On the opening day a discussion on the Treatment of Pneumonia will be introduced by Dr. von Korányi of Budapest and Dr. Pel of Amsterdam. On April 20th Dr. Litten of Berlin will introduce a discussion on Endocarditis and its Relations to other Diseases. The titles of several papers to be read are already announced. Any medical man may become a member. The price of a member's ticket is 15 marks, which entitles the holder to receive a copy of the Transactions. In connexion with the Congress there will be an exhibition of recent medical appliances. The permanent secretary is Dr. Emil Pfeiffer, 13, Parkstrasse, Wiesbaden.

PARALYSIS OF THE FACIAL AND HYPOGLOSSAL NERVES.

TWO recent and interesting contributions referring to the above forms of paralysis have been published by Oppenheim[1] and Hoffmann.[2] In the case recorded by Oppenheim the patient was during early childhood the subject of fits which produced unconsciousness lasting several days, and on recovering consciousness there developed a paralysis of the face on the left side and a paralysis of the corresponding side of the tongue. The paralysis was partially recovered from afterwards, though some local atrophy of the affected muscles remained as a persistent condition. The patient came again under observation 18 years later when the muscular paralysis and atrophy mentioned above were still present. Fibrillary tremors were also met with and the electrical excitability of the left facial region was quantitatively diminished. The knee-jerk on the right side was exaggerated, and from a consideration of the clinical facts and history of the case it was believed to be an instance of encephalitis of the pons—a disease which has received but little attention, although there can be no doubt that such an affection, comparable to the spinal and bulbar forms of infantile paralysis, does exist. Of the facial muscles affected in the first instance, some—e.g., the orbicularis palpebrarum and orbicularis oris—had recovered their power. The platysma myoides showed a paralysis of its lateral portion, while the fibres of the median portion still seemed active. From the fact that muscles near the median line—viz., the mentalis, quadratus menti, orbicularis oris, and corrugator supercilii—were readily stimulated by, and responded to, the electric current applied to the sound side, Oppenheim draws the practical conclusion that these muscles were innervated from the facial nerve of the opposite side. The case related by Hoffmann is that of a girl, 17 years of age, who during childhood had suffered from chronic otitis media. This was subsequently followed by cellulitis of the neck, itself probably the sequel to a sore-throat. The local lymphatic glands in the side of the neck were inflamed and swollen and it is probable that the inflammatory process spread into and involved the trunk of the hypoglossal nerve. There were no bulbar or spinal symptoms, and this fact, coupled with the absence of general pain and of fever, negatived the idea of poliomyelitis or of an acute condition such as hæmorrhage. The patient did not perceive anything wrong with her tongue for a considerable time and meanwhile hemiatrophy of the tongue had made some progress. Fibrillary tremors were present during examination on both sides of the tongue and the application of the electric current to the neck was efficient in provoking appropriate movements of deglutition in which the muscles on both sides of the pharynx participated. Hoffman also points out that in the process of protrusion of the tongue the paralysed half lagged behind and thus caused a curvature of the body of the tongue with the concavity towards the paralysed side, while in retraction of the tongue from the condition of extreme protrusion these appearances were reversed. He is of opinion that in this case the hypoglossal nerve was not entirely affected, but that some of its fibres must have escaped destruction. The two cases mentioned above illustrate two different kinds of lesion which may affect a peripheral organ like the tongue, and produce somewhat similar clinical symptoms, though the cases were very different in causation and in gravity of prognosis.

[1] Berliner Klinische Wochenschrift, No. 16, 1899.
[2] Neurologisches Centralblatt, No. 18, 1899.

THE GOVERNMENT AND THE REPORT OF THE ROYAL COMMISSION ON THE LICENSING LAWS.

THE Government gave, through the Home Secretary, the following answer to a question asked by Sir J. Leng as to the intentions of the Government with regard to this report: "Of course, I have given my best consideration to the report of this Commission, but I am obliged to say that in view of the difficulties of the question and in the present circumstances the Government do not see their way to make any promises of legislation during the present session." It must be allowed that "in the present circumstances" the Government may well ask to be excused from considering this important report. But they will make a great mistake if they think that anything in the difficult nature of the subject will free them from the responsibility of dealing with it and that soon. The vice of drinking is more costly to the nation even than war.

"THE DIAGNOSIS AND TREATMENT OF HEPATIC ABSCESS."

DR. H. MALBOT, a retired surgeon-major of the French army who gained his experience in Algeria where he saw 22 cases of hepatic suppuration, has recently concluded a series of articles on the above subject in a Parisian medical journal.[1] According to this observer we should see many more cases of abscess of the liver recorded if the diagnosis of the affection were less difficult and its semeiology less uncertain. Pain he regards as the most important of the symptoms. It presents itself in two chief forms: 1. A feeling as though some structure were being torn, resembling in some respects an electric shock, situated in the hepatic region and always occurring after a sudden movement or an attempted muscular effort. 2. Pain brought on by succussion lancinating or pungent, extending towards the right shoulder, the pit of the stomach, the lower part of the abdomen, or the right iliac fossa, according to the situation of the abscess. This painful succussion according to Dr. Malbot, is well-nigh pathognomonic of hepatic suppuration. Externally an abscess manifests itself by the "coving" and deformity of the gland rather than by its hypertrophy. As for the attendant fever,

[1] Archives Générales de Médecine, August, September, and October, 1899.

it has no special characteristics and may assume any type. Sometimes even it is altogether absent. Dr. Malbot has never observed the peritoneal friction mentioned by certain writers and he also ignores their pulsation of the liver. Neither has he ever met with a case that was complicated by jaundice. After all, he says, the only absolutely certain indication of hepatic abscess is the presence of pus, as shown by an exploratory puncture. These punctures are quite harmless and if unsuccessful at the first attempt should be repeated several times in different directions. With regard to the pathology of hepatic suppuration Dr. Malbot differs from Kelsch, Kiener, and the other authorities who seek to incriminate dysentery as the sole source of the disorder. In his opinion abscess of the liver, as seen at all events in Algeria, may owe its origin to a multiplicity of causes. Any factor which tends to lower the tone of the system and impair its powers of resistance, such as heat, damp, improper food, malaria, and intestinal ulceration of any kind (even typhoid and tuberculous), may lead to hepatic suppuration. In treating abscess of the liver prompt surgical intervention is essential. As soon as possible the accumulation of pus should be removed by means of a free incision. Adhesions being rare Dr. Malbot directs an assistant to immobilise and at the same time compress the organ with both hands before he himself uses the knife. When the pus has been evacuated the cavity is washed out preparatory to the insertion of four, five, or six large red rubber drainage-tubes which are so arranged that the wound is completely plugged, thus rendering the escape of pus into the peritoneal sac an impossibility. This procedure Dr. Malbot calls "nailing the liver to the parietes." Its success at his hands has been considerable, the average duration before perfect cicatrisation of seven cases having been 14 days.

THE CEYLON BACTERIOLOGICAL INSTITUTE.

IT is a well-known fact, and one upon which the British nation has received somewhat carping criticism from many foreigners, that scientific research in the British Empire receives scarcely any aid at the hands of the State. But the converse view shows a prospect of which we may well be proud, and that is the generosity and readiness of British subjects to forward with their best endeavours efforts for the advancement of science. In London we have the great hospitals, and the laboratories of the Royal Institution built and endowed by Mond. In India the great feudatory princes and munificent commoners among the Parsees have given freely of their wealth for the founding of research laboratories and other scientific work; and now from the island of Ceylon comes the news that a bacteriological institute has been given by the generosity of a well-known family in the island—namely, the de Soysas. Some eight years ago Mr. J. W. Charles de Soysa offered the Government a sum of 10,000 rupees for the erection of a Pasteur institute, but the authorities did not see their way to accept the gift. In 1897, however, Mr. de Soysa renewed his offer for the purpose of building a bacteriological institute and, further, when it was found that the proposed building would cost far more than the sum originally offered he undertook to find funds for the erection of a building on a plan approved by the Government. In this work he was ably assisted by Dr. Marcus Fernando, who spared no time or trouble in arranging the details of the building and in personally superintending its construction after the best European models. On Jan. 31st the institute was formally opened by the Governor, when Mr. A. Perry, principal colonial medical officer, read a statement concerning the founding of the institute. His Excellency then declared the buildings open, with a few words of warm thanks to Mr. de Soysa for his munificence. The director of the institute will be Dr. Marcus Fernando. The building is equipped with the latest appliances for bacteriological research and a number of specimens were on view at the time of opening. A marble slab on the main wall bears the following inscription: "The de Soysa Bacteriological Institute. Presented to the Government of Ceylon by J. W. Chas. de Soysa, Esq., J.P., in commemoration of the Diamond Jubilee of Her Most Gracious Majesty the Queen. Opened by H.E. Sir Joseph West Ridgeway, K.C.B., K.C.S.I., Governor, January 31st, 1900."

THE following resolution was unanimously passed at a meeting of the Bradford and West Riding Medical Union held on Feb. 15th:—"The members of the Bradford and West Riding Medical Union beg to offer their hearty congratulations to Professor Victor Horsley, F.R.S., one of the Direct Representatives of the medical profession on the General Medical Council, on the success with which he has struggled to defend the interests of medical practitioners against the continual neglect shown by the representatives of corporations on the General Medical Council, and hope that the medical profession may long continue to have the advantage of being represented on the Council by a gentleman so distinguished alike by scientific attainments and by remarkable energy and skill in pushing the work of reform which is so much needed."

AT the monthly board meeting of St. John's Hospital for Diseases of the Skin on Feb. 13th the Earl of Chesterfield was presented with a silver inkstand by the medical staff and governors of the institution as a mark of their esteem on the occasion of his marriage. Mr. G. A. Berkeley, the treasurer, thanked Lord Chesterfield for the time which he had devoted to the hospital and the tact with which he had steered it on several critical occasions into its present smooth and peaceable waters.

MR. A. H. SPURRIER, medical superintendent of the Government Leper Asylum at Zanzibar, reports that he has found in three places on the outskirts of Zanzibar city the breeding places of the true fever-bearing mosquito. From them he has succeeded in hatching the anopheles. We learn that he has also found a larva which preys upon the mosquito larva to a formidable extent—a discovery which may have considerable significance.

ON Feb. 16th the Queen, who was accompanied by Princess Henry of Battenberg and Princess Victoria of Schleswig-Holstein, the Duchess of Roxburghe, Mrs. Mallet, Miss Minnie Cochrane, and Sir John MacNeill being in attendance, visited the Royal Isle of Wight Infirmary. She was received by the Rev. W. Welby and Dr. A. G. Davey and was wheeled in a chair to the Children's Wing, which she had opened last year in commemoration of her Diamond Jubilee.

WE are forced to delay dealing with the report published this week by the London County Council on the bacterial treatment of crude sewage. The report, which is a supplementary one, is of considerable interest, for in it Dr. Clowes and Dr. Houston give some particulars of the physical, chemical, and bacteriological character of the deposit which accumulates on the coke beds at Barking and Crossness.

AT the meeting of the Medical Society of London on Monday next the discussion on the Pathology and Treatment of Appendicitis will be resumed. The following points are suggested for discussion: (1) non-operative treatment; (2) indications for operative treatment; (3) nature of operation and any special details; and (4) after-treatment.

DR. DUDLEY BUXTON will open the adjourned discussion on the After-effects of Ether Inhalation at the next meeting

of the Society of Anæsthetists to be held at 8.30 P.M. on Friday, March 2nd, at 20, Hanover-square. Members of the profession will be admitted on presenting their visiting cards.

SIR THOMAS SMITH, Bart., F.R.C.S. Eng., Surgeon-Extraordinary to the Queen, has been appointed Honorary Consulting Surgeon to the Finsbury Dispensary, in succession to the late Sir James Paget, Bart., F.R.S.

MR. F. J. STEWARD has been appointed assistant surgeon to Guy's Hospital, and also assistant surgeon to the Hospital for Sick Children, Great Ormond-street.

THE STATUTES OF THE RECONSTITUTED UNIVERSITY OF LONDON.

THE statutes made for the University of London by the Commissioners appointed under the University of London Act, 1898, have now been approved and are very much what it was expected that they would be. The purposes of the University of London are defined as being:—

To hold forth to all classes and denominations both in the United Kingdom and elsewhere without any distinction whatsoever an encouragement for pursuing a regular and liberal course of education; to promote research and the advancement of science and learning; and to organise, improve, and extend higher education within the appointed radius.

Her Majesty in Council is the Visitor of the University, and the Chancellor, who will be selected on the coming into force of the statutes, will hold office for life.

THE CHANCELLOR, THE VICE-CHANCELLOR, AND THE SENATE.

The Senate will consist of the Chancellor, the Chairman for the time being of Convocation, and 54 persons (who may or may not be graduates of the University) to be appointed as follows:—

Four by Her Majesty in Council; 16 by members of Convocation—viz., six by the registered Graduates in Arts (including Divinity), one by the registered Graduates in Laws, one by the registered Graduates in Music, two by the registered Graduates in Medicine and in Surgery, and six by the registered Graduates in Science; 16 by the members of the respective Faculties—viz., one by the members of the Faculty of Theology, four by the members of the Faculty of Arts, one by the members of the Faculty of Laws, one by the members of the Faculty of Music, three by the members of the Faculty of Medicine, four by the members of the Faculty of Science, one by the members of the Faculty of Engineering, and one by the members of the Faculty of Economics and Political Science (including Commerce and Industry); two by the Royal College of Physicians of London; two by the Royal College of Surgeons of England; two by University College, London; two by King's College, London; one by the Honourable Society of Lincoln's Inn; one by the Honourable Society of the Inner Temple; one by the Honourable Society of the Middle Temple; one by the Honourable Society of Gray's Inn; two by the Incorporated Law Society of the United Kingdom; one by the Corporation of the City of London; two by the County Council of the Administrative County of London; and one by the Council of the City and Guilds of London Institute for the Advancement of Technical Education.

If any of the aforesaid bodies decline or omit to exercise their power of appointment the power lapses to the Privy Council. There are arrangements made by which 21 of the 54 senators shall retire triennially.

The Senate is defined as:—

The supreme governing and executive body of the University and shall have the custody and use of the common seal of the University and shall have the entire management of and superintendence over the affairs, concerns, and property of the University, and subject to the provisions of the statutes the Senate shall take such measures and act in such manner as shall appear to it best calculated to secure the adequate protection of the interests of all classes of students, whether internal or external, collegiate or non-collegiate, and generally to promote the purposes of the University.

The Senate, therefore, may make new statutes or statutes for altering, revoking, or adding to the statutes, it being provided, however, that they can impose no regulations repugnant to law or to the statutes of the University for the time being, can enforce no religious tests, and can impose no disabilities on the ground of sex. Each year the Senate will select one of its own members to be Vice-Chancellor.

THE STANDING COMMITTEES OF THE SENATE.

There will be three standing committees of the Senate, viz.:—(1) The Academic Council; (2) The Council for External Students; and (3) The Board to Promote the Extension of University Teaching. The function of these committees is advisory.

(1) *The Academic Council.*

The Academic Council will consist of the Chancellor, the Vice-Chancellor, the Chairman of Convocation, the 16 persons appointed to the Senate by the member of the respective faculties, and a member or members of the Senate elected by the Senate to make up the numbers to 20. The Senate will always confer with the Academic Council before coming upon any determination as to such matters as—

(i.) The assignment of funds for the erection or extension of buildings or for the provision of apparatus or equipment in the University or in the schools of the University;
(ii.) The admission in whole or part of duly qualified institutions as schools of the University;
(iii.) The appointment of professors, assistant-professors, readers or lecturers of the University;
(iv.) The allocation of funds either for the endowment or remuneration of appointed teachers or in connexion with schools of the University;
(v.) The determination of the duties of appointed teachers of the University;
(vi.) The recognition of members of the teaching staffs of public educational institutions within the appointed radius as teachers of the University;
(vii.) The regulation of the courses of study for internal students of the University and the provision of opportunities for and aids to research.

The Academic Council will also advise the Senate generally upon all matters relating to the internal students, with a special eye to the equalisation of the standards of knowledge and attainments prescribed for the degrees conferred upon internal and external students respectively, and will also report upon the extent to which work done under the Board to promote the Extension of University Teaching can count as part of the prescribed course of study of the University.

(2) *The Council for External Students.*

The Council for External Students will consist of the Chancellor, the Vice-Chancellor, the Chairman of Convocation, the sixteen members of the Senate appointed by Convocation, and members of the Senate elected by the Senate sufficient to make up the number to 28. The Senate will invite and receive reports from this Council upon all matters dealing with the external students.

(3) *The Board to Promote the Extension of University Teaching.*

This Board will consist of the Chancellor and Vice-Chancellor, the Chairman of Convocation, and such a number of members of the Senate elected by the Senate as may be from time to time prescribed. The board will advise the Senate upon the means best adapted to encourage and extend teaching of a university standard within the appointed radius.

CONVOCATION.

The Convocation of the University will consist of the Chancellor, Vice-Chancellor, the present members of Convocation, and all other persons registered as members of Convocation. The persons entitled to be so registered shall be—

(i.) The graduates who on the day fixed for the coming into force of these statutes are qualified according to the existing regulations of the University to become members of Convocation, but have not yet been registered.
(ii.) All other graduates of three years' standing from the date of their first degree or who shall have attained a degree higher than that of Bachelor, provided always that if and whenever the Senate shall by any statute create any new degree the holders thereof shall not unless Convocation so determine be entitled to be registered.
(iii.) All members of the three Standing Committees of the Senate who are not already members of Convocation during their tenure of office.

Convocation will elect its own chairman and deputy chairman, and a quorum for despatch of business will be 50 members present. The ordinary meeting will be held every year and extraordinary meetings may be summoned by the chairman on the written requisition of 20 members of Convocation.

The election by Convocation of the Chancellor and the election by the graduates of persons to be appointed by Convocation members of the Senate shall be by voting, papers to be delivered by the voters personally or to be sent by post to the clerk of Convocation.

After the election of the first Senate Convocation shall determine the persons by whom and the form and manner in which such elections by voting papers shall be conducted and the results thereof shall be ascertained and declared and generally all other matters relating to such elections.

FACULTIES AND MEMBERS OF FACULTIES.

The eight Faculties of the University will be: (1) Theology; (2) Arts: (3) Law; (4) Music; (5) Medicine; (6) Science; (7) Engineering; and (8) Economics and Political Science.

The members of the respective Faculties in the University will be:—

(i.) Those teachers of the University who on the day fixed for the coming into force of these statutes shall have been nominated as members of the respective Faculties by the Commissioners.

(ii.) Appointed teachers of the University.

(iii.) Such other teachers of the University as may from time to time be admitted to a Faculty by the Senate.

They will remain members of the several faculties so long as they continue to be teachers of the University. In each faculty they will elect one of themselves as dean who will hold office for two years and be eligible for re-election. There will be regular meetings of each faculty, when the members shall consider and report upon any matter referred to them by the Senate and upon any matter relating to courses of study and provision of teaching in the subjects comprised within that faculty. They will also, at meetings for the purpose, elect the representatives of the faculties upon the Senate.

SCHOOLS AND TEACHERS OF THE UNIVERSITY.

The following will be the first schools of the University:—

In all the Faculties in which they respectively afford instruction: University College, London; King's College, London.

In the Faculty of Theology: Hackney College, Hampstead; New College, Hampstead; Regent's Park College; Cheshunt College; the Wesleyan College, Richmond; the London College of Divinity commonly called St. John's Hall, Highbury.

In the Faculties of Arts and Science: The Royal Holloway College, Egham; Bedford College.

In the Faculty of Science: The Royal College of Science, London; (In Agriculture only), the Royal Agricultural College, Wye.

In the Faculty of Medicine: the Medical School of St. Bartholomew's Hospital, the Medical College of the London Hospital, the Medical School of Guy's Hospital, the Medical School of St. Thomas's Hospital, the Medical School of St. George's Hospital, the Medical School of the Middlesex Hospital, the Medical School of St. Mary's Hospital, the Medical School of the Charing-cross Hospital, the Medical School of the Westminster Hospital, the London (Royal Free Hospital) School of Medicine for Women.

In the Faculty of Engineering: The Central Technical College of the City and Guilds of London Institute for the Advancement of Technical Education.

In the Faculty of Economics and Political Science: The London School of Economics and Political Science.

The Senate can admit other educational institutions to the University either in whole or in part if situated within the administrative County of London, including the City of London. All schools of the University will be open to visitors appointed by the Senate and the Senate will have power to remove any school from the University.

The following persons shall be Teachers of the University:—

(i.) The professors, assistant professors, readers, and lecturers of the University appointed as officers of the University by the Senate (herein called "appointed teachers");

(ii.) Such members of the teaching staffs of public educational institutions within the appointed radius, whether schools of the University or not, as on the day fixed for the coming into force of these Statutes shall have been recognised as teachers of the University by the Commissioners or shall thereafter be so recognised by the Senate (herein called "recognised teachers").

The Senate, with the consent of the governing body, may nominate any teachers in a school of the University to be appointed teachers, may allocate funds for their remuneration, and for the erection or extension of buildings as places of instruction, and may make arrangements with the governing bodies of any schools of the University to provide common courses of instruction.

So soon as the funds of the University permit the Senate will found and make all arrangements for the maintenance of professorships, readerships, and lectureships. They will also keep a register of recognised teachers who will continue to be "recognised" so long as they respectively continue to be members of the teaching staffs of the institutions in connexion with which they shall have been recognised and so long as the conditions under which they were so recognised are fulfilled.

BOARDS OF STUDIES.

The Boards will be appointed by the Senate annually and will comprise such members of a faculty as teach or examine in any of the subjects for which the board is constituted, such other teachers of the University as teach any of the said subjects, and other persons—never to exceed one-fourth of the total number of members of the board. A teacher of the University may be a member of more than one board. The boards will elect their own chairmen and will give advice to the Academic Council and the Council for External Students before these bodies make reports to the Senate. In appointing the Boards of Studies the Senate will aim at securing to representatives of every subject of University study opportunity of expressing their views to the Senate.

DEGREES.

The following degrees may be granted by the University:—

(1) Bachelor and Doctor of Divinity; (2) Bachelor and Master of Arts and Doctor of Literature; (3) Bachelor and Doctor of Laws; (4) Bachelor and Doctor of Music; (5) Bachelor and Doctor of Medicine and Bachelor and Master of Surgery; (6) Bachelor and Doctor of Science.

The students in such subjects as the Senate shall from time to time determine to be comprised within the respective Faculties of Engineering and Economics and Political Science may proceed to degrees in science, but every diploma of such degree shall state that it has been conferred for proficiency in engineering or in economics and political science, as the case may be.

Internal students and external students alike shall be eligible for all the above degrees, but in medicine and surgery no students shall be admitted to the examinations for a degree who have not gone through the prescribed course of study in a medical school of the University or a medical institution or school in the United Kingdom or any dependency of the British Crown or in foreign parts recognised by the Senate with the approval of Her Majesty in Council as an institution or school whose students may be admitted as candidates for a degree.

No degrees will be conferred save upon examination except certain honorary and *ad eundem* degrees, but the Senate

May, subject to any conditions contained in any regulations to be made by the Commissioners or the Senate, accept, in the place of the whole or any part of the examinations for any of the degrees of Doctor or the degree of Master of Surgery or the final examination for the degree of Bachelor of Science, the results of the study or research of any candidate who in the opinion of the Senate has thereby made a distinct contribution to the advancement of learning or science in any of the subjects in which those degrees are conferred.

The Senate may also admit graduates of or persons who have passed the examinations required for a degree in other universities approved by it for that purpose as internal students and as candidates for any of the higher degrees (except in medicine and surgery) without their having previously taken any lower degree.

EXAMINATIONS: THE POSITION OF THE MEDICAL STUDENT.

A Board will advise the Senate upon questions of matriculation, consisting of the Chancellor, the Vice-Chancellor, the Chairman of Convocation and members annually nominated by the Senate—one-third of such members to be members of the Academic Council and another third to be members of the Council for External Students. There will be Intermediate and Final Examinations as prescribed by the Senate, and no student will be admitted to the Final Examination until three years at least after his matriculation. Separate Intermediate and Final Examinations will be held for Internal and External Students respectively, but the degrees conferred upon both classes of students will represent as far as possible the same standard of knowledge.

The Senate may make arrangements with the Royal College of Physicians of London and the Royal College of Surgeons of England or either of them to conduct jointly with the Senate examinations in such portions of the subjects included in the course of study for a medical degree as may be agreed upon between the Senate and those Colleges or either of them and may also make similar arrangements with other corporations and institutions holding professional examinations in subjects included in other courses of study.

INTERNAL STUDENTS.

Internal and External Students are thus defined in the Statutes:—

"Internal students" of the University mean students who have matriculated at the University and are pursuing a course of study approved by the University in a school or schools or under one or more of the teachers of the University.

"External students" mean all other matriculated students.

The Senate, while prescribing courses of study for internal students, will ensure in each case an academic training of adequate breadth and duration and will endeavour to allow the students a wide option in the choice of study. Any graduate of the University who has taken a degree as an external student may, on completing a prescribed course, be admitted to the next higher degree as an internal student.

THE eighty-third annual general meeting of governors and subscribers of the Royal Ear Hospital was held at the St. Ann's vestry room on Feb. 13th. Mr. Edward Hardisty presided in the unavoidable absence of the Earl of Dartmouth, the president.

THE WAR IN SOUTH AFRICA.

SINCE we last wrote the complexion of affairs in South Africa has altered for the better. Our forces have now been concentrated and they are engaged in a course of action which has so far proved successful. Kimberley has been relieved by a brilliant march; the Boer strongholds at Magersfontein and Spytfontein have been evacuated and occupied by British troops, and the main body of General Cronje's army are fighting a rearguard action while endeavouring to escape towards Bloemfontein, the result of which is not known yet. There is active and energetic movement on all sides; the noise of battle is heard in the western, the eastern, and the southern regions of the conflict, and news of grave import and of a decisive nature may arrive at any moment. The Boers never have met, and never will meet if they can help it, British troops in the open. From the time of Sir Harry Smith to the present their tactics have been the same, but on this occasion they may be compelled to change them. General Buller's troops, too, have been active in the direction of Mount Hlangwane and the east of Colenso, pressing the Boers hard and very successfully on the eastern flank of their investing line. If any portion of the forces of the Federal Republics around Ladysmith have been diverted elsewhere for the protection of the Free State, into which Lord Roberts is now actively carrying war, we may confidently hope that the renewed attempt to relieve Ladysmith on the eastern flank will prove successful. The war is by no means over however; there probably remains a good deal of hard and arduous campaigning work and fighting to be yet undertaken, but there can be little doubt that we are on the right track. The pressure put upon the Government to keep on pouring forces into South Africa has done no harm. The nation is prepared to incur any cost and to make any sacrifice to win. To the more thoughtful among us, however, it has been a satisfaction to recognise that Lord Salisbury has kept his equanimity under circumstances where a cool head was eminently needed. He has all along evidently known his own mind, and has maintained the opinion that he did not think that all those embarrassing foreign contingencies which were hinted at "were at hand or likely to be at hand."

The "entanglement" of Ladysmith has hitherto been the great military obstacle to the success of our arms. Sir Redvers Buller has taken upon himself by far the hardest task of the war and it was one which, as he is understood to have foreseen and realised all the difficulties of it, called for some chivalrous courage on his part. He is stated to have been officially opposed to the selection of Ladysmith as a suitable station for the accumulation of military stores on sanitary as well as strategical grounds, and there is no doubt that as regards the former it has an unsatisfactory medical history. Enteric and other forms of fever and dysentery were of frequent occurrence there and its occupation by the present garrison has proved an unfortunate one in these respects. It is reported to have been the depôt of a large collection of stores and valuables and this, we may suppose, together with political reasons, led to its being held. As General Buller probably had no sufficient land transport to undertake at once a march into the Free State, leaving Ladysmith to take care of itself in the meantime, he had no option but to do the best he could and to undertake the relief of Sir George White. However, as he has now taken a position of strategical importance and entrenched his force at Mount Hlangwane and swept the enemy's trenches at Colenso we may expect to hear that he has succeeded in relieving Ladysmith.

It may be interesting to our readers to know that an emergency ration is served out to soldiers to be carried on the person. It consists of one tin of pemmican and one of chocolate. This is only to be used on emergency, of course. The feeding of the British soldier in South Africa is varied and abundant when he can get it.

The special correspondent of the *Standard* of Feb. 16th had some interesting observations regarding the Royal Army Medical Corps in South Africa:—

> Sir William Mac Cormac has just returned from an inspection tour of the various hospitals. It would be difficult to bestow too great praise on the excellent medical arrangements which have been made. No war has ever been fought in which the wounded soldier has been treated with so much care and consideration. Reforms in many directions will have to be introduced into our army, and it is devoutly to be hoped that our system of medical attendance in peace should be again assimilated to that which obtains in war—i.e., that every important unit may have a medical officer attached to it. One thing is quite certain, the Royal Army Medical Corps must be increased in numbers, for it is quite inadequate even for peace, and the practice of suddenly enlarging it by taking men, when war breaks out, who have had no previous connexion with the service is not one to be commended.

We quite think that the corps must be greatly increased. Its officers in South Africa have done admirable service and deserve every consideration. Their opportunities for leave and professional study will have to be enlarged and the pressure of foreign service on them, which is unduly severe, will have to be decreased. We do not see that there is any insurmountable objection to the attachment of a medical officer to a regimental unit as is now done on active service. It could be made to work in with the system of a Royal Army Medical Corps and, but for the expense which it was said to entail, this would have been done many years ago. An additional number of medical officers on the strength of the corps would have the effect of giving more leave to the remainder. Moreover, the number of medical reserve officers in the country might be increased to meet the exigencies of war when it occurred and in order to enable them to obtain some army training and knowledge of military methods of procedure during times of peace so as to fit them for their work when they were called upon to act in time of war. But there will soon come a time when a complete change must take place in our whole army system, and the change will take the shape of a welding together of the different and various forces of which it is composed.

The present war has not only taught this country, but every other country, a good deal, and has been fruitful of suggestion in many ways. It has given an impetus to the physical training of the youth and young manhood of this country with enormous advantage to manliness and health, physical and moral alike. It has shown the possibility of immensely increasing the strength of defensive warfare. We agree with Lord George Hamilton in thinking that the successful invasion of a country would become a most difficult, if not impossible, undertaking if the adult male population were able to use with intelligence the rifles and modern weapons of warfare, and had undergone some elementary military training, which would also have an excellent influence in the way of personal hygiene. The war has taught us, too, the use, hitherto unsuspected, that might be made of the mountain frontier of India against a hostile and invading army. We have all read of the courage, discipline, and physical attributes of our officers and soldiers in South Africa with admiration. We have yet to prove how far these attributes are capable of being brought out and cultivated by physical training in the open air, and by the development of a similar spirit of obedience and self-reliance among other people than soldiers.

THE PRINCESS CHRISTIAN HOSPITAL.

The steamship which is to convey this hospital to South Africa for the treatment of our troops will sail from Southampton early next week. It has been presented to the Government by Mr. Alfred Mosely of West Lodge, Hadley Wood, Middlesex, who has entirely equipped it, and will support it and accompany it to the Cape. Mr. Mosely's knowledge of the country and climate, gained during 25 years' connexion with South Africa, will prove of considerable value to the efficient working of the hospital. No trouble or expense has been spared to make the hospital in every way worthy of its work. Major H. B. Mathias, D.S.O., R.A.M.C., who is a brother of the gallant Colonel H. H. Mathias, V.C., of Dargai fame, goes out as Government representative with the hospital. The civil staff will consist of the following:—Chief surgeon: Mr. J. Paul Bush, surgeon to the Bristol Royal Infirmary, lecturer on operative surgery in University College, Bristol, and chief surgeon to the Bristol Constabulary. Medical officers: Dr. G. V. Worthington, late senior house surgeon to St. Bartholomew's Hospital, London; Dr. E. A. Nathan, late house surgeon and house physician to St. Mary's Hospital, London; and Mr. A. L. Flemming, late resident surgical officer to the Bristol Royal Infirmary. Dressers: Mr. A. B. Cridland, house surgeon to the Bristol Eye Hospital and late casualty officer, Bristol Royal Infirmary; and Mr. E. M. Pearse, casualty officer, Bristol Royal Infirmary. Nursing staff:

Sister E. C. Laurence of Guy's Hospital, who will be the sister-in-charge, and Sisters M. Leng, E. Atkins, E. M. Fisher, D. A. Snell, and F. Baker. There will also be six non-commissioned officers and 26 hospital orderlies.

The building will consist of four pavilions, each 130 feet in length and containing 25 beds (100 beds in all), with surgery, operation room, nurses' room, fitted bath rooms, washing room for the men, and lavatories attached. The structure itself will be of corrugated iron, hung inside with greenish-tinted canvas. The wards will be comfortably furnished with bedsteads fitted with spring mattresses of the newest design, folding washstands, invalid tables and chairs, and every little detail likely to make them more comfortable and homelike. The surgeries and operation room will be fitted with all the latest improvements, including a very complete Roentgen ray apparatus with all the latest inventions for localising foreign bodies. The accessories include the new mercurial interrupter for making and breaking the current, driven by a special motor of its own. This interrupter gives a particularly steady and distinct image with the fluorescent screen, and it also has the advantage of diminishing the length of time of exposure. An expert in this department is included in the list of medical officers. In addition to the main buildings there will be three stores for warehousing the supplies of provisions, invalid specialties, stimulants, drugs, &c.; there will also be a separate building for the storage of the linen, a laundry, and a very complete kitchen of considerable size. A professed cook and assistants will be in charge of the culinary department. Another large structure will contain a central mess room and sleeping accommodation for the medical officers, nurses, and other members of the staff, which will number in all about 50 persons. The plans and specifications of the hospital were prepared by Mr. Fred. W. Marks, A.R.I.B.A., and the work has been admirably carried out under his superintendence by Messrs. Humphreys, Limited, of Knightsbridge.

(NOTES FROM SIR WILLIAM MAC CORMAC.)

(Continued from p. 405.)

We left Cape Town at 9 P.M. on Jan. 16th by ordinary passenger train and arrived at the small town of Matjesfontein in time for breakfast. This little place is considered to be peculiarly suitable for persons suffering from lung complaints. There is a pleasant-looking hotel, with spacious verandahs, situated quite close to the station. This building has been offered by the owner (Mr. Logan) to the military authorities as a hospital and to be maintained at his own expense. Unfortunately, it is considered to be too near Cape Town for the purpose and too far away from De Aar (where there is a large stationary hospital), as nothing would be gained by unloading the hospital trains here instead of continuing the journey to Wynberg.

We presently continued our journey, passing through a desolate country. The temperature in the carriage reached 90° F. in the afternoon. The veldt on either side of the railway line, extending as far as the eye can reach (until the view is cut off by volcanic hills rising up from the plain), is almost entirely devoid of cultivation, and, indeed, vegetation. It is dotted with clumps of scrub, with here and there a mimosa tree. The innumerable kopjes of arid earth covered by boulders must greatly increase the difficulty of locating one's position in the open by their similarity to each other. The Table Mountain at Cape Town is repeated by similar flat-topped hills of smaller size all along the line. We arrived at De Aar Junction about midnight and did not reach Naauwpoort Junction until 5 A.M. on the 18th. I here met Colonel Gubbins, R.A.M.C. (the principal medical officer of this division), and visited General Kelly-Kenny at his headquarters, which were situated in a little half-finished brick cottage. I visited the field hospital here, under the command of Major Hamilton, R.A.M.C., and also the bearer company, commanded by Major J. Fallon, R.A.M.C. This field hospital is of the usual variety of 100 beds and at present contains but very few sick and wounded and no cases of any peculiar interest. Its managers were hourly expecting orders to proceed to Rensberg. Naauwpoort is now occupied only as a station *en route* for the front, the troops there stationed being only a comparatively few "details." The camp is very healthy.

We left Naauwpoort about 2.30 P.M. for Rensberg for the purpose of visiting General French's command. Lieutenant-Colonel Donovan, R.A.M.C. (the principal medical officer), met me and we were accommodated with tents which were pitched in the garden of a deserted farmhouse which General French has made into his headquarters. The journey from Naauwpoort occupies two hours, the distance being 26 miles, and soon after our arrival I was asked by the principal medical officer to see a case in the field hospital under Major Tate, R.A.M.C., located here. This was the case of a man whose left femur had been smashed by a bullet through the great trochanter. Secondary hæmorrhage had set in 56 hours after the injury and amputation had been performed at the hip-joint. Copious unhealthy suppuration took place and Lieutenant Porter, R.A.M.C., who was in charge of the case, was just about to make a counter opening for its freer escape and I assisted at this operation. I saw this man again two days later when he was much improved. The septic condition had abated, the temperature was lower, and the suppuration was more healthy. At my last visit to this patient, on Jan. 23rd, his condition, both local and general, was much better and there seemed great hope of his early and complete recovery. Amputations during this campaign have been few in number and there may possibly not be another case of disarticulation at the hip-joint with subsequent recovery. The operation was performed in an ordinary bell-tent, which served the purpose as well as can be expected on the field. The dust is a great source of discomfort and trouble in operating and dressing wounds, the soil here being very dry and sandy. The wind is high as a rule and the dust permeates every cranny. Water is very scarce, the entire supply for the troops having to be brought from Naauwport, a formidable item for the transport officers. The flies, which are of the ordinary household variety, are very numerous and it becomes necessary to provide mosquito curtains for all serious cases.

The medical arrangements with this little force are as follows. The troops are practically divided up into two portions, one on each flank, about six or seven miles from Rensberg station. Each regiment has its regimental medical officer constantly with it. Half a field hospital (50 beds) is situated at a farmhouse at each of these two flank positions and one bearer company is with each half hospital. A complete field hospital (100 beds) is situated here as a fixture which will be fed by the half-hospitals at the front—these latter being, of course, mobile and compelled to evacuate sometimes at an hour's notice. The transport of the wounded and sick is carried on by means of the usual ambulance waggons of the bearer companies. Those cases which are unlikely to recover at the stationary field hospitals are conveyed as they accumulate by train to De Aar Junction where the large hospital on the line of communication is situated. The hospital trains in an emergency come all the way to Rensberg and thence to a small siding running into the stationary field hospital, but for ordinary cases in times of inactivity at the front a local hospital train of three trucks fitted with stretchers (Zaverdoski's method) is found to be quite sufficient and to answer the purpose admirably, leaving the two regular hospital trains free for the use of the larger force at Modder river.

The following are notes of an interesting case:—

Corporal Thomas (of the Worcester Regiment), Mounted Infantry, was wounded at Arundel on Nov. 23rd, 1899, whilst with a party reconnoitring the hills at Arundel. He was leading his pony up a hill when a Boer about 400 yards distant fired at him and hit him four times. All the bullets came from the same rifle; he saw the Boer standing up to fire at him. The first bullet struck the fifth metacarpophalangeal joint of the right hand on the extensor surface, smashing the ends of the bones composing the joint, passing along the palmar surface of the metacarpal bones obliquely to its exit between the first and second metacarpal bone and making an irregular oval-shaped wound the largest diameter of which was three inches. The exit wound was on the extensor surface of the hand. The irregular ragged appearance of the wound of exit was caused by smashed bones. The second bullet had its entrance in a small, round, punched-out wound, typical of the Mauser bullet, at the base of the palmar surface of the left thumb and passed obliquely upwards and outwards. Its exit was at the extensor surface of the lower extremity of the radius, the exit being irregular. The third bullet entered at the inferior angle of the left scapula, passing directly from behind forwards. (He had turned

round after being struck a second time.) The exit was at a corresponding level in front through the sixth interspace, about two inches from the median line. The track of the bullet must have been in immediate proximity to the heart, the pericardium, and the large blood-vessels. Both the entrance wound and the exit wound were small, round, regularly punched out, and typical of the Mauser bullet when striking soft structures. The fourth bullet entered behind on the left side in the tenth intercostal space, four inches from the middle line, passing through the lower part of the chest and the upper part of the abdomen. It emerged in the linea semilunaris about the level of the twelfth rib. The entrance wound and the exit wound were typical of wounds from the Mauser bullet. There were no symptoms of internal injury to either the chest or the abdomen. The patient had a slight rise of temperature for three days. I saw him sitting up in the train a few days afterwards regretting his transfer down country, his chief trouble being stiffness of his right little finger joint. There were two other men wounded, one in the left upper arm and the other in the left thigh, both by Mauser bullets. Both had received flesh wounds and were able to retire unassisted.

Corporal Thomas was only discovered to be missing when the troops returned to Tweeddale which is about 10 miles from Arundel. A Red Cross flag was placed on an engine and Major H. G. Hathaway, R.A.M.C., returned to Arundel to look for him. About 300 yards short of the station the train was stopped as the rails had been removed by the Boers. The stretcher party advanced up the line and Assistant-Commandant Grobelaar and his aide-de-camp galloped down from the neighbouring low hills above the railway station. Two women were also seen waving a white flag in front of a farmhouse to the left. This, it afterwards transpired, was done because they thought an armoured train had arrived and they feared that the farmhouse would be shelled. The owner had ordered his women folk to hold out the white flag. Their piano was afterwards found to be full of Mauser rifles. Major Hathaway told Assistant-Commandant Grobelaar that he had come for a wounded man and asked whether he might take him away. The answer was, "Certainly; but there is another man wounded over there and another in another direction," pointing to the hills. Major Hathaway asked that he might be allowed to find these wounded, but the answer was, "My people would not let you go there." Major Hathaway thanked Assistant-Commandant Grobelaar for his kindness to Corporal Thomas in having him removed to the station, but asked, if there were more wounded, why they were not brought down too, well knowing that there were no more, as the roll had been called at Tweeddale. He said that he should take Corporal Thomas to the train, wait for half an hour whilst he dressed his wounds, and then if more wounded did not arrive should conclude that there were none. Needless to say that no more came, but the anxiety of the Boers to exaggerate our losses and minimise their own was very usual. The aide-de-camp several times remarked that there was blood all over the place at which he seemed very pleased. The Boer who hit Corporal Thomas carried him down the hill to the station in his own blanket and said that he would give anything not to have shot him because he thought he was going to die.

On Jan. 19th I visited a former Boer laager about five miles from Rensburg. This laager formed the left flank of the Boer position at the time that our troops occupied Arundel. The huts which they had constructed for themselves still remain scattered over the protected sides of several kopjes, forming a semicircle more or less. These huts consist of a small circle built up of loose stones to form a wall and covered over with brushwood. There are also the marks of many tents, but the latter have, of course, been taken away. Within 20 yards of these habitations there are two graves side by side, covered over with loose stones. The sites of several gun-pits show exactly the position the guns occupied to defend the kopjes. Amongst the huts we found remains of sheep and food, and the manner in which entrails and refuse lay about without any attempt having been made to keep the camping ground clean shows that there is very likely truth in the reports that dysentery is rife amongst the Boers. We also saw the remains of a large water-tank which was perfectly dry, and the ground in the vicinity was marked by the hoof-prints of many horses.

On leaving this laager we drove in an ambulance waggon a couple of miles still further to the left to visit a farmhouse of recent historic interest. This farm was occupied by a Boer farmer, and whilst the enemy were still in this locality one of our scouts—a trooper of the 6th Dragoon Guards—was riding in the vicinity. He was beckoned to from the house and, thinking the people were friendly, he advanced and was treacherously shot. When this news reached our camp at Arundel 100 of the New Zealand contingent and some guns were sent out to punish this farmer. They shelled the house and drove the inhabitants away in great confusion. The New Zealanders took possession of the building. The Boers on hearing the disturbance sent a large party round to the kopjes about 300 yards from the house and compelled our little party to retire. The farm is apparently a rich one for this part of the world, and the cattle still graze quietly in the green paddock, "looting," of course, being strictly forbidden. There is a huge shell hole in one side of the brick house through which a man can comfortably walk. The inside of the building on our visit presented a scene of confusion. Broken glass, women's apparel, crockery ware, and books littered the floor, and a piano had been torn open. Some pictures still hang upon the walls, and across one of them is written, "You who live in this house, Jaisfontein, read the English version of the Bible, gospel of St. Luke, chap. xi., verses 20–27 and 35, Jan. 1st, 1900." As our troops occupied this position on the date mentioned it seems probable that the Scriptural scholar belongs to Rimington's scouts, who are quartered about a mile away. The farm is at present absolutely deserted and a half-starved cat alone occupies the house.

On Jan. 6th—the date of the disaster to the Suffolk Regiment—a certain amount of interesting details of the Boer medical arrangements was gathered by Major North, R.A.M.C., who is in command of the bearer company stationed at Möder's Farm on our left flank, which is mentioned above. On that occasion about 30 of the Suffolks were killed and the major and his men were compelled to bury them. When the flag of truce enabled the wounded and dead of both sides to be taken charge of the Boers would not allow any of the soldiers to visit the spot, but said that they themselves would assist Major North and his men of the Royal Army Medical Corps to bury our dead, which they did. Major North saw seven ambulance waggons among the small Boer force and inside these were placed mattresses in a very comfortable way. The Boers would not allow him to look into all of the waggons, but they asked him if he thought our waggons were better. He replied that they were. He also learned that the enemy have two very good hospitals in the town of Colesberg—the railway station and the Reformed Church—and he could see the large Geneva Cross flags flying from the roofs of these buildings. He found that one of the two surgeons he met on the field among the Boers was a graduate of Edinburgh University, practising in time of peace in the Orange Free State. The surgeon said that he preferred doctoring the enemy to losing his practice and house. Major North read the Burial Service over the graves and this was followed by prayer and hymn-singing by the Boers, after which all parted amicably.

Having received information privately by telegram through Lord Roberts that General White had reported that there were 2400 sick and wounded in Ladysmith I immediately wired that if my services were not at present necessary on the Cape side I would like to proceed again to Natal so as to be present at the relief of Ladysmith and render assistance there. I am now on my way there in the steamship *Moor*, which was detained for 24 hours at Port Elizabeth in order that I might reach it after a long and tedious journey of 30 hours from Rensburg. I expect to arrive at Durban on Saturday, the 27th, and to hear, I trust, the welcome news that Ladysmith has been relieved or is on the point of being so. If this be successfully accomplished and a serious defeat inflicted on the Boers at the same time it will prove, I believe, the beginning of the end of the war.

WILLIAM MACCORMAC.

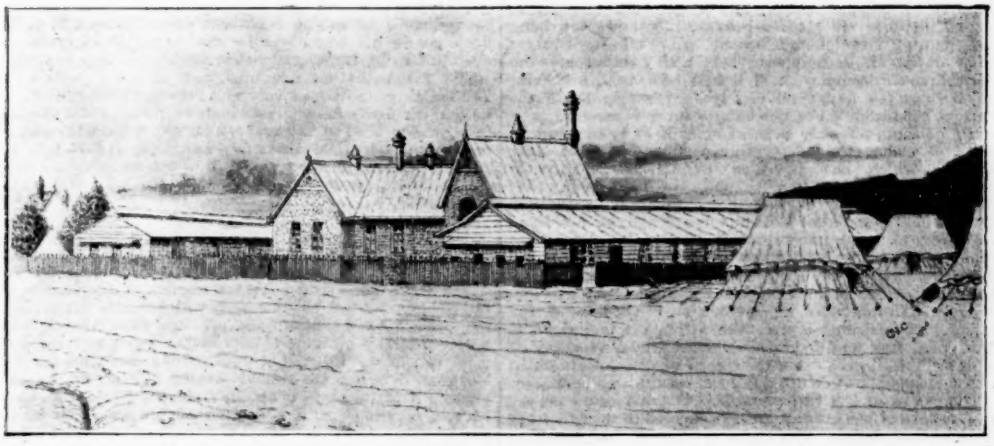
(FROM OUR WAR CORRESPONDENT.)

De Aar Camp, Cape Colony, Jan. 28th.—Our hospital train left Cape Town last Friday week for the front and reached Modder river on the following Tuesday to find things very quiet at that advanced post. Beyond an occasional shot or two fired morning and evening nothing worthy of mention has occurred from a military point of view to break the monotonous watching of the Boer movements that there obtains. The field hospitals have all been emptied of their

cases (principally medical and chronic) in view of the cot accommodation that may possibly be needed when a general advance is decided upon and the next great battle takes place. I regret to say that enteric fever is prevalent there and, worse to relate, seems on the increase, and as the war goes on a considerable accession in the number of victims to this terrible military scourge may very reasonably be expected despite every possible sanitary precaution being taken to prevent its occurrence. As the list of enteric cases mounts up it will, if it has not already, become a serious question with our medical authorities at our hospitals on the line of communication where and how to locate these fever cases so that one and all may receive the necessary and continuous care and watching which they require. With the merely wounded it is a very different matter, for after primary and careful dressing both officers itself to the front, and will no doubt be dealt with by the medical officers successfully, for they have already foreseen and recognised the extreme gravity of the situation in this war and made judicious arrangements to grapple with emergencies as soon as they arise.

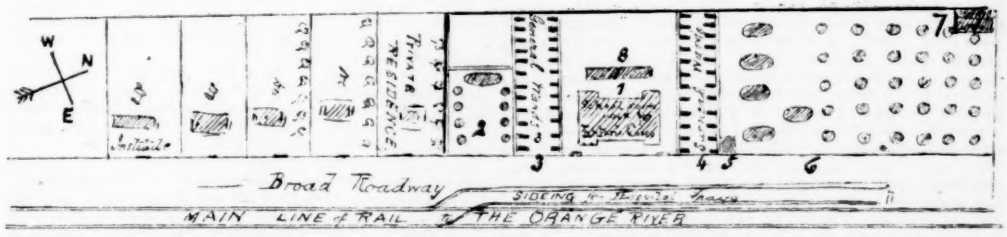
Let me say something about De Aar, a most important military camp, about five hours' journey from the Free State border and 501 miles from Cape Town. It is a large camp, in which may be found regiments representing every branch of our military service, together with an extensive remount depot at which thousands of mules and horses are detrained for supply elsewhere. The amount of work—traffic, goods, and telegraph—got through at this station is enormous, and the manner in which details are worked out reflects credit on all concerned. One has only to visit the station by day or night to comprehend the character and amount of

FIG. 1.



View of Military Hospital at De Aar. The illustration gives a general view of the appearance of the military hospital at De Aar. The buildings beginning from the left of the picture are as follows:—1. Surgeons' tents. 2. Wooden huts. 3. Formerly De Aar schoolroom, now used as an enteric fever ward and for administrative offices. 4. Wooden huts. 5. Hospital orderlies marquees.

FIG. 2.



Plan of Military Hospital at De Aar. This side of the rail all the land is used as a camping ground by the various regiments located at De Aar. 1. Administrative offices and enteric wards. 2. Officers' marquee and tents. 3. Wards with position of cots shown. 4. Wards with position of cots shown. 5. Principal medical officer's office. 6. Patients' marquees and tents. 7. Latrines. 8. Lavatories.

and men can be easily and safely removed by the admirably served hospital trains from the front to the base; but with enteric fever cases there are obviously reasons why this shifting process with safety to the patient or without risk to others cannot well be carried out. On the other hand, with a view to possible contingencies, no medical officer would like to have his accommodation for wounded lessened by a large number of enteric fever cases being thrown on his hands. It has been suggested that marquees should be used for their reception, but enteric fever cases could not safely be so located in a climate like this, where the daily heat is so great, the nights so cold, and where violent dust-storms and other drawbacks are daily in evidence. This question, then, of what to do with our daily increasing cases of enteric and other forms of fever must inevitably, sooner or later, force labour necessary to avoid confusion or delay in the traffic, and it is only as this campaign proceeds, with thousands of troops passing up to the Modder or elsewhere and hundreds returning torn, wounded, and mangled from the fields of battle, that an observer realises to the full the extent which detail enters into such an undertaking as a great war. De Aar is both a receiving and a halting-place and must always take a prominent position amongst the stations to be occupied by our military during the present war. A few months ago it was not of much importance, being kept up by a little farming interest located in the district and containing two general stores, one church, an hotel, and a sprinkling of small cottage tenements tenanted by the railway officials. But owing to the fact that it is a junction where several important lines meet from

Modder river, the Free State, and Port Elizabeth, while it is situated in a plain between parallel kopjes easy of defence, it has been selected and fortified as a most important strategical centre on our line of communication and bids fair to increase in size and importance, as the war proceeds. The railway station, a commodious building of brick, stands 4180 feet above sea level. The air is very dry. During the day at times the heat is oppressive, the thermometer standing in the shade as high as 104° F. Indeed, on Thursday last it broke the record by three degrees during a terrible dust-storm, which enveloped the camp for hours. As evening approaches and night comes on the temperature rapidly decreases some 40 or 50 degrees, and when darkness deepens the unclouded canopy of heaven scintillates with myriads of stars, while the cool, invigorating breezes wafted from every point of the compass make amends for the tortures of the heated day that has gone. The grape and the peach grow well, but however large or ripe they may be they do not possess the flavour of our English fruit. The water here is peculiar; it is very hard, contains a large quantity of mineral matter, and nitrates in abundance, but no nitrites. It gives all new-comers severe griping and purging, complaints which pass off in two or three days. Dilute sulphuric acid and catechu are the general remedies employed. I myself have been a sufferer for the last few days and can speak feelingly as to the distress produced. For our enteric fever cases milk is in much demand, but only a small amount of it can now be procured owing to the continued drought (over four months) which has prevailed at De Aar. Meat is lean and somewhat tough, and insipid from that cause. Bread even at the hotel table is sometimes sour. These are, after all, minor complaints, but there are others of more importance—especially the continuous winds which bring most disagreeable dust-storms to cover the tents, destroy the food, and stop our watches. Flies keep man and beast in a perpetual state of worry and discomfort. Out-of-doors we are nearly blinded with the columns of dust, and if we retire within the tent or walls eyes, ears, lips, and mouth are attacked by a very host of biting winged insects. For the species of discomforts which I have emunerated I do not think De Aar can well be beaten.

The camps of the various regiments are located on the eastern side of the railway and are exposed to the full force of these dust-storms. The men are, however, fairly healthy, one regiment which has been some weeks here having only six sick in hospital so far.

The Military Hospital (*vide* sketch and plan) is situated about half a mile N.N.E. of the railway station. It is composed of a large brick-built edifice together with six marquees and 36 double-walled bell tents. It is under the charge of Major Marsh, R.A.M.C., who took over the main building with 92 cases on Nov. 29th last, since which time 46 officers, 1004 British troops, and 72 men of the auxiliaries have been treated at these sick quarters. The cases at present under treatment number 230 and the number of deaths up to date amount to only six, five of which were due to enteric fever, the remaining one succumbing to a gunshot perforating wound of the intestine. No officers are treated here but at the old railway hospital which is situated at the other end of the township. The military hospital can easily accommodate 300 or more cases, but two more rows of wooden huts are in course of erection, the materials having been discharged already at De Aar railway station. I regret to say that enteric fever is leaving its mark here as well as at Modder river. Captain Mackenzie of the Army Service Corps died last week from enteric fever contracted at Modder river and since then two other patients have succumbed, one of these being an officer. When the men have done their fighting and all war stimuli are removed by cessation of hostilities then enteric fever always makes its appearance to swell the casualty lists and to rob many a homestead of its bread-winner. Major Marsh, the principal medical officer here, permitted my going over and inspecting the wards and patients. The sick all looked as if their wants, professionally and domestically, had been well looked after. Indeed, every man among the sick and wounded to whom I spoke expressed complete satisfaction with the kind, humane, and judicious treatment which had been received under Major Marsh and his several colleagues. The huts on the northern side are kept for the surgical cases and those on the southern side for the medical and general cases, while in the two large schoolrooms in the centre brick building enteric fever cases are treated. The various small rooms under this roof are used for dispensary, linen, and stores purposes. The earth closet system prevails, and the men's latrines are placed in the N.N.W. angle of the camp ground.

The civil practitioners deserve any amount of credit for the manner in which they have backed up the officers of the Royal Army Medical Corps, but a great deal of the detail and clerical work has had to be done by the latter in consequence of the former being perfectly fresh to the requirements of military organisation. I should like to mention that the French Society for Affording Aid to the Wounded, having its offices in Paris, have sent out to Africa no less than 45 handsome cases containing instruments, bandages, medicaments, books, writing paper, office furniture, and a host of very useful articles, for the use of our hospitals at the front. These cases each contain different articles, but one and all are of the newest and most appropriate design and are quite up to, if not ahead of, the times. Surely some public recognition should be made to our across-Channel neighbours for their very handsome and timely gifts.

There has been only one major operation at this hospital, the serious cases having been sent down to the stationary hospitals at the base. At De Aar there is an excellent operating-room, larger and better ventilated than anything which I have as yet inspected, and an x-ray room also. The burial-ground seems very well kept and looked after. I noticed six newly made graves in a row; each had a wooden tablet at the head of the grave, and at the base the names of P. J. Houden, 1st Essex; J. Langford, R.F.A.; R. C. Henly, Coldstream Guards; P. E. Rees, Welsh Fusiliers; P. J. Shaw, Grenadier Guards; and Ward, R.A.M.C., respectively.

NOTES ON BOARD A VOLUNTEER TRANSPORT.

(FROM OUR OWN CORRESPONDENT.)

You asked me to send you a full account of the feeding of the troops on board the *Montfort*, with possible hints as to improvements for the future. I am glad that I have not to give any hints as to improvements but everything is most excellent. Instead of provisioning the ship for the troops and having the rations cooked and served by the purser's department, as is usually done, the authorities have on this occasion—perhaps because all the troops on board are, or were a short time ago, Volunteers—given the shipping company a fair sum per man per day (I believe the sum is 1*s.* 6*d.*), and owing to the generosity of the owners even this sum has been exceeded, as you can well believe after seeing the enclosed bill of fare for a Sunday and a Friday taken at random.

Sunday.—Breakfast, 8 A.M.: Irish stew, bread-and-butter, marmalade, tea and coffee, and biscuits. Dinner, 1 P.M.: Vegetable soup, roast beef and boiled mutton, cabbage, boiled potatoes, and plum pudding and sauce. Tea, 6 P.M.: Cold roast beef, cold boiled ham, bread-and-butter, pickles, and jam.

Friday.—Breakfast: Labrador herrings, bread-and-butter, marmalade, and tea and coffee. Dinner: Pea soup, fish (ling) and sauce, roast beef and salt pork, haricot beans, and boiled potatoes. Tea: Smoked herrings, cold meat, bread-and-butter, biscuits, and jam.

Instead of the usual arrangement of fresh bread twice a week the men have fresh bread always. The owners (Messrs. Elder, Dempster, and Co.) have also given an excellent writing-case to each man and a pack of cards to each mess of 14 men, and they will shortly give them a pound of tobacco each. The men may therefore, indeed, consider themselves lucky. The troops on board consist of the battery of the Honourable Artillery Company, now known as the City Imperial Volunteer Artillery, with seven officers (including a medical officer and a veterinary surgeon), 125 men, and 114 horses; the Oxfordshire Company of the Imperial Yeomanry with three officers and 116 men, 60 horses, and one dog (a fox-hound which is the pet of the ship); and Lord Iveagh's Irish Hospital with eight officers and dressers, 51 men, and 80 mules. We are thus very well off for medical men, of whom the following is a complete list:—Dr. George Stoker, Dr. Friel, Dr. Pounden, and Captain Mould, R.A.M.C., of the Irish Hospital; Captain Atwood Thorne, of the City of London Imperial Volunteers; and Dr. Prentice, the surgeon attached to the ship.

There has been very little illness on board. A few men have been slightly injured by the horses and mules, and as the weather has been rough there has been a certain amount

of sea-sickness, but from the medical point of view there has been nothing of real interest. Some 60 men of the battery have been vaccinated, but so far only one anti-typhoid inoculation has been performed. Nearly all the men will be inoculated after we leave Las Palmas. The ship is provided with excellent refrigerators, which are worked by the Linde system, and with 39 days' fresh provisions, including fresh milk for all on board.

s.s. *Montfort*, Transport 53, nearing Las Palmas, Feb. 9th.

THE ROYAL COMMISSION ON THE METROPOLITAN WATER-SUPPLY.

(*Continued from p. 410.*)

IN previous articles[1] on Lord Llandaff's report on the metropolitan water-supply we have given a summary of the recommendations at which the Commissioners arrived and we have considered in some detail the questions of control and those having reference to the difficulties of severance of the various metropolitan water companies' undertakings, as well as the opinions on the question of purchase which have been given by the outside authorities. A very large part of the report, however, has not been touched upon. It refers to financial questions and to the reasons which have led the Commissioners to recommend that the undertakings shall be bought and administered by a new Board of Control. On the question of finance the divisions under which the Commissioners considered their report were the present financial position of the water companies, the possible terms of arbitration with special reference to the contentions of the London County Council, and the results which would probably obtain in the case of purchase. The cases in which provincial water undertakings have been bought by local authorities are briefly considered and some pages of the report are devoted to a consideration of the present and prospective requirements of London with regard to water-supply; and a scheme is given with regard to the composition of the new body which the Commissioners propose should be created to carry out their recommendations. With reference to the financial position of the metropolitan water companies the Commissioners say that they have prepared a separate volume giving maps which show the area supplied by the companies and also their intakes, works, and principal mains. The volume containing these maps, plans, and diagrams has not yet been published, but the Commissioners give a good account of the financial condition, and this we think our readers should study that they may realise a little the value of the undertakings.

The ordinary stock of the water companies in 1897 had a nominal value of £10,228,548. The capital of the New River Company represented £2,019,958, and consisted of King's shares and Adventurers' shares, which are real estate, and £500,000 of new shares which were issued in the year 1866. There is no limit to the dividend which can be paid by the New River Company on either of these classes of shares. Seven other companies have £686,700 stock on which the dividend is limited to 7½ per cent.; £400,000 stock with a dividend limited to 7 per cent.[2]; and £7,121,890 stock limited to a dividend of 10 per cent. All the water stocks which are limited as to the amount of dividend paid are entitled to back dividends—that is to say, a dividend larger than the limited dividend may be declared in order to make up the deficiency of any previous dividend which has fallen short of the statutory limit. The Stock Exchange value of the £10,228,548 of ordinary stock was £32,645,189 at the end of the year 1897. In addition to the ordinary stock, in June, 1898, there was preference stock to the amount of £801,676 which was entitled to interest at the rate of 5 per cent. and 4½ per cent. There was also irredeemable debenture stock to the amount of £4,250,110, with an annual charge of 5 per cent., 3½ per cent., and 4 per cent. There was also debenture stock amounting to £1,109,950 redeemable at par at various dates between 1919 and 1922, and on this the interest payable was 3 per cent. and 2½ per cent.; and the Kent Company had a mortgage of £42,000 at 3½ per cent. The total amount of preference debenture and mortgage issues was £6,263,736. The share and loan capital together amounted to £16,432,284 and the Stock Exchange valuation was £41,705,443 in 1897. The net profits—that is to say, the profits after deducting interest on debenture and preference stocks and mortgage—amounted to £1,032,728, and the dividends on shares were £973,741. The West Middlesex Company paid their maximum statutory dividend many years ago and by the year 1887 all the back dividends were paid off. In 1887 the price of the water supplied to consumers was reduced by 5 per cent., in 1890 by 7½ per cent., and in 1894 by 10 per cent. The Chelsea Company and the Kent Company have commenced to pay off their back dividends. The Grand Junction Company paid their maximum dividend in 1880 and have done so every year since that date except in the year 1895. The Lambeth Company have paid the maximum on their 7½ per cent. every year since 1882 except in the year 1895, and they reached their maximum on their 10 per cent. stock in 1897. The East London Company and the Southwark and Vauxhall Company cannot pay their maximum dividends. The dividend paid by the New River Company was nearly 13 per cent. in the year 1897. The total amounts of the seven companies on which the maximum dividend has been reached is £4,613,230; the amount of capital on which the maximum has not been reached is £3,595,360. The back dividends claimable in March, 1897, going back to the date at which the limit of dividend was first imposed on each company, were as follows: Chelsea, £778,414; East London, £2,006,157; Grand Junction, £617,897; Kent, £189,736; Lambeth, £920,670; Southwark and Vauxhall, £1,219,982; making a total of £5,732,856. The back dividends of these six companies amount to 81 per cent. of the share capital which is £7,053,524. The companies are authorised to issue in preference and debenture stocks a further amount of £3,124,500. The Southwark and Vauxhall Company (July 25th, 1898) were authorised to issue £650,000 3 per cent. redeemable debenture stock to be spent in making reservoirs and extending mains. The West Middlesex, Grand Junction, and New River Companies were authorised by the Staines Reservoir Act of 1896 to raise £1,000,000 in debenture stock and in 1898 they were allowed to borrow a further sum of £250,000. These three authorised increases in capital account amount to £5,024,500, of which the only part yet issued is some of the Staines committee's debentures.

The Commissioners point out that there was great difficulty in obtaining an accurate account of the population supplied by the companies. According to the returns made for the year 1898 the number was estimated to be 5,819,583, of which 4,478,396 were within the county of London and 1,341,187 outside it. The area supplied in London was 120 square miles and that outside London was 230 square miles. During the year 1898 the average daily quantity of water supplied was 204,053,955 gallons. Irredeemable debenture stock of the companies amounted in June, 1898, to £4,250,110 and the annual charge for interest was £175,557. In the case of purchase the Commissioners give it as their opinion that the only way for a purchaser to deal with this stock will be to take it over from the companies. The irredeemable debenture stock they consider could not fairly be converted into redeemable stock, even if it were secured upon rates, unless the change received the assent of the stockholders. The redeemable debenture stock and the mortgages should in case of purchase be taken over with the same power of redemption as that which the companies at present possess. Preference stocks existed in the case of two companies, the Chelsea and the Southwark and Vauxhall. The interest upon them, which is 4 per cent. and 4½ per cent. respectively, has always been paid, and they are trustee stocks because the two companies have paid 5 per cent. on their ordinary stock from 1879 to the present time. It would be reasonable, the Commissioners say, to value the stock as a trustee stock on the basis of 2·75 per cent. and at this valuation the nominal amount of £801,676 would be worth £1,428,036. The Commissioners report that they cannot foresee how Parliament would deal with the different classes of stocks in the case of purchase, but for the purposes of their inquiry they assume that the stocks would be taken over as they are and that the interest charged (which amounts to £249,472) must therefore be deducted from the gross profits which would be available for the purchaser.

[1] THE LANCET, Jan. 27th (p. 253), Feb. 3rd (p. 329), and Feb. 10th (p. 407).

[2] In the year 1897 this amount was increased by £30,000.

"THE DWELLING-HOUSE FROM THE DOCTOR'S POINT OF VIEW."

ON Feb. 8th Dr. G. VIVIAN POORE delivered a lecture at Carpenters' Hall, London-wall, on "The Dwelling-house from the Doctor's Point of View."

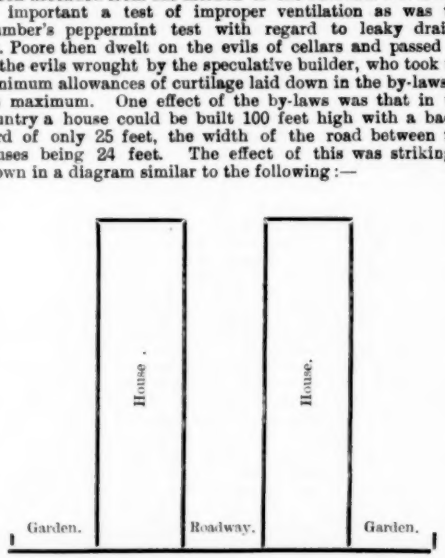
Of all the things which made for health or sickness Dr. Poore said probably the dwelling-house was the most important. In answer to the question "Where will you have it, town or country?" he showed upon the screen some figures and graphic statistics which clearly proved that the country was the most desirable. From a diagram constructed from the supplement to the fifty-fifth report of the Registrar-General showing the survivals per 100,000 births in three different localities, (*a*) healthy districts of the United Kingdom, (*b*) England and Wales, (*c*) a crowded city (Manchester), it was seen that in the healthy districts out of 100,000 births 80,000 to 85,000 live to their fifth year, while in Manchester only 60,000 to 65,000 live. From life tables compiled by Dr. Tatham he showed that the expectation of life of a male child at birth in the healthy districts of England was 52 years, while in the Manchester township it was only a little over 28 years. The expectation of life was also greater at the age of five than in the first year, which showed the enormous amount of infant mortality. At all ages the expectation of life was greater in the healthy districts than in the Manchester township. At the age of 45, for instance, the expectation of life in the healthy districts was 29 years, while in Manchester it was only a little over 17 years. From mortality figures compiled by Mr. Shirley Murphy with regard to different sanitary areas of London, taking the mortality figure for London as a whole as 1000, the mortality of England and Wales was only 360, while among various districts of London the figure was 1592 in the Strand, in Hampstead 673 only, and in Lewisham 704. If, therefore, from the medical man's point of view we were able to make a choice of a residence it should be in the country and not in the town.

Another important matter was that of soil, which might be porous, as sand, gravel, or chalk, or impervious such as clay. What were the advantages and disadvantages of these different soils? The porous soils allowed the gases from the earth, one of which was carbonic acid, to rise through them. He was inclined to think that pure carbonic acid was not a very dangerous gas, and if the soil was pure the emanations from it would not be dangerous; but in a porous soil filled with impurities from cesspools or leaking sewers and putrid things buried in the soil the danger was very considerable. The house built upon a porous soil was liable to aspire the gas from the soil by reason of the heat of the fires, &c., in the house. It had, therefore, become the rule in most places to cover the foundations of a house with six inches of concrete; but the gases must have a vent somewhere, and when, as in a town, we had impermeable streets and pavements it became extra dangerous to have any vent-holes in houses because the gas, not being able to escape elsewhere, was drawn into the house. On sanitary grounds the earth round a house should be tilled. Clay soils were undesirable because they held moisture and were cold, while in bad weather it was difficult to get outdoor exercise. But the clay was impermeable and the gases which percolated through porous soil did not get through clay. As a medical man, however, he doubted whether clay was a dangerous soil. Of course it was to people susceptible to damp, but he was speaking of the average individual. The chief objection to clay was the difficulty of house-drainage. In travelling about the suburbs of London where building was going on he had seen the builders covering the foundations according to the by-laws with concrete, but the builder went into the back garden, took out the sand and the gravel, and put decomposing rubbish in their place, covering the rubbish with a few inches of soil. The object of the by-laws was thus defeated and it was another instance of the saying that although it was easy to drive a coach-and-four through an Act of Parliament it was still easier to drive a coach-and-six through by-laws.

From a medical man's point of view there was nothing more important than the aspect of a house. The best possible aspect was south-east, and if one angle only pointed north you got the sun in the house at all times of the day when it was shining. There was no doubt that sun was a very valuable thing from a health point of view. Not only did you burn less coals, but sunlight was a most important disinfectant and there was much truth in the Italian proverb, *Dove non va il sole va il medico*. Then, again, the position of the house with regard to the road was important. Here the lecturer showed on the screen several plans designed to secure the full benefit of the sun all the year round and a position with regard to the road which did not necessitate sewers being placed under the house. By having a south aspect for the front of the house the larder would be in the north, an important factor with regard to keeping food fresh.

The next point to be considered was the material of which the house should be constructed. Bricks soaked up an enormous amount of water and most kinds of stone were better, being much drier than brick. One of the warmest building materials was mud and it was the only local material in the chalk districts of England. The by-laws promulgated by the Local Government Board said that houses should be built of hard, dry, incombustible material bonded together, &c. That excluded wood. In a city like London wood was of course not to be thought of, but many urban councils had adopted these by-laws with the result that even in truly rural districts a wooden house could not be built. With regard to dryness he did not think there was a better material than wood. Our friends in Manitoba and the backwoods lived entirely in wooden houses and to make the building of wooden houses illegal seemed to him a very strong measure indeed. There were signs that the Local Government Board was giving way on this point, and he thought it highly probable that they would eventually allow the building of wooden houses provided they were 50 feet from other buildings. He pointed out the importance of wood cottages as cheap dwellings for agricultural labourers in country districts where the building material was to hand, and suggested that the Worshipful Company of Carpenters should offer a prize for the best design for a wooden cottage.

Referring to internal arrangements he would not say that London houses could be much different from what they were, but from a medical man's point of view they were open to criticism, the most obvious being that the area of the house was too small for its cubic contents. He also criticised the trap gully, the disposition of the rooms, and the insanitary position of water-closets, as well as defective ventilation. The fact that in the early morning the smell of cooked bacon ascended from the kitchen to the bedroom was almost as important a test of improper ventilation as was the plumber's peppermint test with regard to leaky drains. Dr. Poore then dwelt on the evils of cellars and passed on to the evils wrought by the speculative builder, who took the minimum allowances of curtilage laid down in the by-laws as his maximum. One effect of the by-laws was that in the country a house could be built 100 feet high with a back-yard of only 25 feet, the width of the road between the houses being 24 feet. The effect of this was strikingly shown in a diagram similar to the following:—



Dr. Poore said that he was an advocate of allowing people to have a garden. He himself would rather live under a couple of hurdles with a garden than in the best stucco house without a garden. But the way in which some councils dealt with building operations was a great hindrance to the lovers of gardens. Some people talked of taxing gardens at their site value; that he called sanitary perdition. In assessing

rates for sanitary purposes the cubic capacity of a house should be considered, but the garden ought not to be considered, for a garden was a sanitary gain to the whole community.

REPORT OF THE INDIAN PLAGUE COMMISSION UPON HAFFKINE'S ANTI-PLAGUE INOCULATION.

WE have received from the Under Secretary of State for India a copy of the fourth chapter of the forthcoming Report of the Indian Plague Commission. This chapter has been issued in anticipation of the publication of the complete Report, in recognition of the practical importance of the subject with which it deals. The chapter in question, which covers some 87 pages of foolscap size, is devoted solely to a consideration of Mr. Haffkine's method of prophylactic inoculations, or, as they are termed in the report, "anti-plague inoculations."

It is impossible to sum up in a few words the very extensive ground which this chapter covers. It may be said, however, that it is mainly a close but lucid criticism of a large mass of material, statistical and otherwise, which was placed before the members of the Commission in many different parts of India; that this is supplemented by the results of certain special observations and experiments made by the members of the Commission themselves or undertaken by others at their request; and that it ends with a number of definite conclusions and recommendations to which the consideration of this material naturally leads. It is to the latter that most readers will probably look first, and by that very large body of persons in this country who have been awaiting a definite "yes" or "no" verdict as to the value of Mr. Haffkine's method the answer required will be found in the last paragraph of this chapter of the report. "We cannot," that paragraph runs, "bring to a conclusion this consideration of anti-plague inoculation by Mr. Haffkine's prophylactic fluid without expressing our sense of the importance of the method which Mr. Haffkine has devised and of the results which have been achieved by it. The credit due to Mr. Haffkine is the greater because the difficulties with which he had to contend in this matter could only have been overcome by great zeal and endurance. Mr. Haffkine's work on anti-plague inoculation, while not based on any new scientific principle, constitutes, it seems to us, a great practical achievement in the region of preventive medicine." From these remarks it will be seen that, in general terms, the value of the method of prophylaxis in question is fully endorsed by the Indian Plague Commission. Notwithstanding the severe and searching criticism to which the method and the results claimed for it are subjected, and in spite of certain obvious defects in both (which are pointed out in detail in this chapter), the Commissioners consider Mr. Haffkine to have performed a great life-saving work in the face of almost insuperable difficulties.

The principal conclusions of the Commission in regard to the prophylactic naturally group themselves into two divisions: firstly, those concerned with the protective effect of the inoculations upon individuals and communities; and, secondly, those concerned with the feasibility of adopting a general policy of inoculation as a practical measure against the ravages of plague. We quote in full the conclusions arrived at under each of these heads.

Firstly, in regard to the protective value of the prophylactic inoculations the Commission summarise their conclusions as follows:—

I. Inoculation sensibly diminishes the incidence of plague attacks on the inoculated population, but the protection which is afforded against attacks is not absolute. On the one hand, plague has attacked persons who have undergone inoculation as many as four times in the course of two years previous to their attack. On the other hand, as many as 8 per cent. of the inoculated population may suffer from plague, as was the case in Bulsar. Many varying influences have been at work in determining the rate of attack in different places, and it is impossible to give a numerical expression for the measure of protection against attack which inoculation confers.

II. Inoculation diminishes the death-rate among the inoculated population. This is due not only to the fact that the rate of attack is diminished, but also to the fact that the fatality of attacks is diminished. Here, again, no numerical expression for the amount by which the death-rate is diminished can be given.

III. Inoculation does not appear to confer any great degree of protection within the first few days after the inoculation has been performed. This fact, we may note in passing, has an important bearing on the risk of infection which would be incurred by recently inoculated persons if they were left behind in surroundings so plague-infected as to render their evacuation by the uninoculated desirable.

IV. Inoculation confers a protection which certainly lasts for some considerable number of weeks. It is possible that the protection lasts for a number of months. The maximum duration of protection can only be determined by further observation.

V. The varying strength of the vaccine employed has apparently had a great effect upon the results which have been obtained from inoculation. There appears to be a definite quantum of vaccinating material which gives the maximum amount of protection; and provided that this quantum can be injected in one dose, and provided also that the protection turns out to be a lasting one, re-inoculation might with advantage be dispensed with. The best results of inoculation will only be obtained after an accurate method of standardisation has been devised.

Secondly, in regard to the feasibility of adopting inoculation as a general plague measure the Commission formulate the following conclusions:—

1. Experience gained hitherto has shown that it is very seldom possible to get a large proportion of the inhabitants of an uninfected place inoculated.

2. It has been possible, where the inducement of exemption from segregation and eviction has been offered, to get a large proportion of the inhabitants of an infected place inoculated quickly.

3. It has been possible in one place, Mysore city, even where no inducement that touched the great mass of the people could be offered, to get a considerable proportion of the inhabitants of an infected place inoculated quickly.

4. It has been possible, also, to induce a large proportion of particular communities, such as the Khojas of Bombay and Karachi, to be inoculated under the influence of their leaders.

The recommendations based upon these conclusions, and on the additional "consideration that it is advisable to make the operation as effective as possible, as little inconvenient as possible to the person inoculated, and as easily carried out as possible by the inoculator," are as follows:—

I. We have already insisted on the necessity for the accurate standardisation of the vaccine, as being essential to the attainment of the best results, both as to the protection conferred and as to the duration of that protection. We have pointed out, also, that the introduction of an accurate system of standardisation may possibly obviate the necessity of employing two successive inoculations.

II. With a view to dispelling the natural fears of the people, and avoiding all unnecessary risk to the inoculated, and further, with a view to enabling the inoculations to be carried on with the least possible amount of attendant inconvenience, we would insist upon the necessity that stringent precautions should be taken to ensure that all the vaccine used is quite free from contamination, and we would recommend that the volume of the necessary dose should be made as small as possible.

III. With a view to removing any possible ground for distrust as to the conveyance of disease by inoculation from one person to another we would recommend that the syringe should be sterilised in the presence of the person about to be inoculated.

IV. We are of opinion that inoculations under the safeguards and conditions stated above should be encouraged wherever possible, and in particular it seems to us desirable to encourage inoculation among disinfecting staffs and the attendants of plague hospitals.

Although occupying the last pages of the section of the report now issued we have quoted these conclusions and recommendations near the commencement of this notice for the reasons already stated. For the present we leave them without comment and may proceed to discuss briefly the larger mass of subordinate and detailed conclusions arrived at in the body of the report, upon which the main conclusions and recommendations just quoted are based.

The section of the report now issued opens with a brief *résumé* of the history of preventive inoculation from the discovery of small-pox inoculation down through the discovery of vaccination, the work of Pasteur upon anthrax, that of Ferran upon cholera, and the more recent work of Haffkine himself upon the last-named disease before he took up the subject of plague prophylaxis. It is unnecessary here to dwell upon this preliminary review of what is familiar to most readers who have any acquaintance at all with the history of preventive medicine. Coming to the subject of inoculation against plague it is pointed out that the first experiments in this direction were those of Yersin, Calmette, and Borrel, who in 1895 made a number of comparatively successful experiments on the production of immunity against plague in rabbits and guinea-pigs by the hypodermic injection of dead cultures of plague bacilli. It was left to Mr. Haffkine to apply successfully a similar method on a large scale to the prevention of plague in human beings.

The method followed by him is conveniently discussed under the following different headings:—

I. The method of preparing mass cultures of the plague bacillus.
II. The method of controlling the purity of those cultures.
III. The method of killing the plague bacilli with the view of converting the culture into an immunising material.

IV. The method of decanting and bottling the prophylactic fluid.
V. The method of ascertaining that the vaccine is free from contaminating micro-organisms and the precautions which are adopted for preventing the growth of such organisms.
VI. The method of standardising the vaccine.
VII. The composition of the vaccine.
VIII. The volume of the prescribed dose.

As to the mode of preparing the mass cultures, the report expresses full approval of the methods adopted to avoid the use of such animal products as might be offensive to the feelings of the natives of India, and at the same time to produce a growth in mass on a liquid substratum and to provide for the efficient aeration of the cultures. Approval is also, on the whole, expressed of the second point under consideration—the method of controlling the purity of the cultures—though at the same time it is pointed out that to rely solely upon "the specular appearance of the colonies of plague bacilli, seen from behind by the reflected light through the depth of the agar," which is the method hitherto adopted, is one which, in less experienced hands than those of Mr. Haffkine, could scarcely be regarded as a trustworthy index of the purity of the culture.

The method of killing the cultures of plague bacilli hitherto practised—by subjecting them to a temperature of 65° C. for one hour—is also fully approved as being the routine method adopted by every bacteriologist for a similar object. It is, however, pointed out that Mr. Haffkine has made no experiments upon the effect of this heat, or upon the effect of the addition of ½ per cent. of carbolic acid as practised by him, upon the immunising powers of the fluid. The German Plague Commission has, however, shown that as regards the bacterial sediment in the prophylactic fluid its immunising powers are in no way diminished by the heating process, and the authors of the present report themselves have proved by experiment that the same is true of the supernatant fluid. The curious fact is added that the experiments of the German Plague Commission showed that the addition of ½ per cent. carbolic acid had no effect upon the immunising powers of a *heated* plague culture, although it completely destroyed these powers in an *unheated* culture. No explanation of this curious fact is offered nor is any attempt made to determine its significance.

The methods of decanting and bottling the fluid and of securing its sterility are naturally discussed at considerable length. The mode hitherto adopted—of storing the fluid in ordinary medicine-bottles closed by corks and sealed with sealing-wax—is one which obviously presents very great difficulties in ensuring sterility, and in spite of various methods of sterilising the bottles, the corks, and the syphon, the process of syphoning off an organic fluid such as the plague prophylactic from flasks into bottles cannot, it is found, be accomplished without admitting, in a certain proportion of instances, outside contaminations. It will be recalled that Colonel Lawrie, I.M.S., of Hyderabad, went so far as to condemn, in most unmeasured language, the entire use of the prophylactic in consequence of the contamination of a certain proportion of bottles. The members of the Plague Commission are more moderate in their criticism. They discovered by a series of accurate experiments that in some 22·5 per cent. of bottles contaminations are present. These are, in their opinion, due partly (but not "almost entirely," as Mr. Haffkine urged) to imperfections in the sealing of the bottles and partly to the method of syphoning off the fluid from the flasks into the bottles. They, further, while urging the necessity for devising some method which shall ensure the absence of such contaminations, fully admit that, from a practical point of view, the presence of these contaminations has never been shown to have such harmful results as might be, and have been, urged against them on *a priori* grounds. "We have not," they say, "had any evidence laid before us which goes to show that any serious ill consequences have resulted from the defect in sterility which was spoken of above. We made careful inquiries into this question in the various centres where anti-plague vaccinations have been performed. In the overwhelming majority of cases no evidence was adduced to show that any injurious effects had supervened upon inoculation. In a few isolated cases, however, there was evidence that abscesses had occurred in the vaccinated at the seat of injection." It is added, however, that it is impossible to assert that such abscesses, or an occasional long-continued reaction at the seat of inoculation and continuance of fever, were in truth due to these contaminations and were not merely toxic effects.

The method of standardising the prophylactic hitherto in use has been of a very simple, not to say primitive, character. It has consisted in holding one finger behind the flask containing the fluid and judging by the degree of opacity present whether the fluid was of ordinary strength, and therefore to be administered in the standard doses of two and a half cubic centimetres or of such strength as to be administered in fractions or multiples of that dose. In other words, a rough estimate of the amount of sediment (or dead bacilli) present has been taken as an estimate of the immunising powers of the fluid. A second method of estimating its powers has been by observing its effects upon the first 10 or 20 patients inoculated, the strength aimed at being such as to produce an average temperature in the persons inoculated of 102° F. The difficulties and objections in the way of both these methods are very obvious, and it is not surprising that the Commission dwell on the imperfections of both methods. The difficulties in the way of standardising a fluid of the kind and of obtaining an accurate dose of the immunising material are indeed exceedingly great. No systematic method, it is pointed out, has been hitherto practised for ascertaining the virulence of the cultures originally employed for the production of the prophylactic. Further, it is shown that, while the sediment contains the great bulk, if not the entirety, of the immunising material, the supernatant fluid may in some instances contain a considerable amount of toxins. Where very large doses of a particular sample of the prophylactic are recommended there can be no certainty that a dangerous dose of these toxins may not be introduced. No attempt, it is also pointed out, has hitherto been made to ascertain the weight of the sediment, or dead bodies of bacilli, injected in a given dose; and in view of these considerations the members of the Commission are compelled to state that they "cannot but take a serious view of the fact that in a case like the present, where the estimation of the virulence was neglected, the weight of the bacterial sediment in a prescribed dose was in some samples of the vaccine seven times as large as in other samples."

It is obvious from these statements that much yet remains to be done before the practice of inoculation with a fluid of this nature shall fulfil all the conditions which sound scientific reasoning rightly demands of it. For the present—and this in itself is no small achievement—the method may justly claim to be a practical success and very nearly, if not quite, to attain to the high ideal of a certain and safe prophylaxis against one of the most deadly of all diseases. It is, moreover, founded upon a strict scientific basis, though it is clearly in many and important details open to the charge of imperfection and empiricism. Time will doubtless remedy these defects, and it is certainly regrettable that the members of the Commission have contented themselves with merely pointing out these imperfections and the necessity for overcoming them and have not, with some minor exceptions, made any definite suggestions or recommendations as to the manner in which they should be overcome.

The statistics of the inoculations in various centres undergo strict investigation. The principal observations upon the effect of the inoculations have been made in Bombay, Daman, Lanauli, Kirki, Undhera, Hubli, Dharwar, Gadag-Betigeri, Bangalore, Karachi, Bulsar, Belgaum, and some other towns and villages. For the present we must content ourselves with this enumeration of places and with the brief statement that, while the criticism of the evidence brought forward in each of these places is largely of the nature of an academic discussion of statistical material, it ends in almost every instance with a free admission that the inoculations did largely reduce the mortality in the given place. To these criticisms and to the objections urged against Mr. Haffkine's method of expressing numerically the reduction in mortality brought about by the inoculations we may, perhaps, refer on a future occasion.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 6079 births and 5750 deaths were registered during the week ending Feb. 17th. The annual rate of mortality in these towns, which had been 21·2 and 22·7 per 1000 in the two preceding weeks, further rose to 25·8 last week. In London

the rate was 22·9 per 1000, while it averaged 27·8 in the 32 provincial towns. The lowest death-rates in these towns were 14·3 in Brighton, 15·8 in Cardiff, 18·1 in Bristol, and 18·4 in Bradford; and the highest rates were 41·3 in Wolverhampton, 41·5 in Blackburn, 42·7 in Salford, and 54·8 in Preston. The 5750 deaths in these towns included 469 which were referred to the principal zymotic diseases, against 428 and 449 in the two preceding weeks; of these 138 resulted from whooping-cough, 132 from measles, 102 from diphtheria, 33 from "fever" (principally enteric), 31 from scarlet fever, 31 from diarrhœa, and two from small-pox. The greatest mortality from measles occurred in Wolverhampton, Leicester, Salford, Oldham, Preston, and Sunderland; from scarlet fever in Burnley; and from whooping-cough in West Ham, Birmingham, Norwich, and Salford. The mortality from "fever" showed no marked excess in any of the large towns. The 102 deaths from diphtheria included 35 in London, 10 in Leicester, nine in Sheffield, five in Leeds, and five in West Ham. Two fatal cases of small-pox were registered last week in Hull, but not one in any other of the 33 large towns. There were eight cases of small-pox under treatment in the Metropolitan Asylums Hospitals on Feb. 17th, against 24, 21, and 17 at the end of the three preceding weeks; no new case was admitted during the week. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 2052, against numbers decreasing from 3578 to 2089 on the 13 preceding Saturdays; 159 new cases were admitted during the week, against 190, 174, and 157 in the three preceding weeks. Influenza was certified as the primary cause of 74 deaths in London. The deaths referred to diseases of the respiratory organs in London, which had declined from 1221 to 423 in the six preceding weeks, rose again last week to 527, and were 50 above the corrected average. The causes of 102, or 3·7 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Nottingham, Newcastle, and in nine other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Liverpool, Manchester, and Sheffield.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had risen from 23·0 to 27·1 per 1000 in the five preceding weeks, further rose to 31·0 last week and exceeded by 5·2 per 1000 the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 17·2 in Greenock and 23·3 in Aberdeen to 35·4 in Dundee and 50·6 in Perth. The 958 deaths in these towns included 24 which were referred to measles, 20 to diarrhœa, 18 to whooping-cough, 11 to scarlet fever, seven to diphtheria, and two to "fever." In all 82 deaths resulted from these principal zymotic diseases, against 81, 66, and 61 in the three preceding weeks. These 82 deaths were equal to an annual rate of 2·7 per 1000, which was 0·6 above the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of measles, which had declined from 32 to 19 in the four preceding weeks, rose again to 24 last week, and included 17 in Glasgow and six in Paisley. The deaths from diarrhœa, which had been eight and 18 in the two preceding weeks, further rose last week to 20, of which seven occurred in Glasgow and nine in Dundee. The fatal cases of whooping-cough, which had been eight and 14 in the two preceding weeks, further rose to 18 last week, and included 10 in Glasgow, four in Aberdeen, and two in Paisley. The 11 deaths from scarlet fever showed an excess of eight over the number in the preceding week, and were all registered in Glasgow. The fatal cases of diphtheria, which had been nine and none in the two preceding weeks, rose again last week to seven, of which three were recorded in Glasgow and three in Edinburgh. The deaths referred to diseases of the respiratory organs in these towns, which had been 212 and 242 in the two preceding weeks, further rose last week to 325, and exceeded by 40 the number in the corresponding period of last year. The causes of 47, or nearly 5 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had declined from 50·3 to 29·7 per 1000 in the six preceding weeks, rose again to 42·4 during the week ending Feb. 17th. During the past four weeks the death-rate in the city has averaged 36·6 per 1000, the rate during the same period being 21·3 in London and 25·5 in Edinburgh. The 284 deaths registered in Dublin during the week under notice exceeded by 85 the number in the preceding week, and included 15 which were referred to the principal zymotic diseases, against 12 and 17 in the two preceding weeks; of these five resulted from whooping-cough, three from diphtheria, three from "fever," two from diarrhœa, one from measles, and one from scarlet fever. These 15 deaths were equal to an annual rate of 2·2 per 1000, the zymotic death-rate during the same period being 1·9 in London and 1·0 in Edinburgh. The deaths from whooping-cough, which had increased from one to five in the six preceding weeks, were again five last week. The fatal cases of diphtheria, which had been three and five in the two preceding weeks, declined again to three last week. The deaths referred to "fever," which had been two and none in the two preceding weeks, rose last week to three. The two fatal cases of diarrhœa corresponded with the number in each of the two preceding weeks. The mortality both from measles and from scarlet fever showed a decline from that recorded in the preceding week. The 284 deaths in Dublin last week included 40 of infants under one year of age and 81 of persons aged upwards of 60 years; the deaths both of infants and of elderly persons were in excess of the numbers recorded in the preceding week. Ten inquest cases and eight deaths from violence were registered, and 95, or one-third, of the deaths occurred in public institutions. The causes of 18, or more than 6 per cent., of the deaths in the city last week were not certified.

VITAL STATISTICS OF LONDON DURING JANUARY, 1900.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality during January in each of the 43 sanitary areas of London. With regard to the notified cases of infectious diseases in the metropolis it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 8·0 per 1000 of the population, estimated at 4,589,129 persons in the middle of this year. In the three preceding months the rates had been 14·4, 12·6, and 8·8 respectively. The rates were considerably below the average in St. George Hanover-square, Westminster, St. James, Westminster, Strand, City of London, St. Olave, Southwark, and Woolwich sanitary areas; while they showed the largest excess in Bethnal Green, St. Saviour, Southwark, Bermondsey, Wandsworth, Lewisham, and Plumstead. 21 cases of small-pox were notified in London during January, of which 11 belonged to Hackney and two each to Fulham, Shoreditch, and Bethnal Green sanitary areas; 20 small-pox patients were admitted into the Metropolitan Asylums Hospitals during the month and 21 remained under treatment on Saturday, the 3rd inst. The prevalence of scarlet fever showed a further decline from that recorded in recent months; among the various sanitary areas this disease showed the highest proportional prevalence in Fulham, Bermondsey, Wandsworth, Greenwich, Lewisham, and Plumstead. The Metropolitan Asylums Hospitals contained 2126 scarlet fever patients at the end of January, against 3406, 3343, and 2797 at the end of the three preceding months; the weekly admissions averaged 180, against 426, 304, and 197 in the three preceding months. The prevalence of diphtheria showed a further slight decrease from recently monthly numbers; the disease was proportionally most prevalent in Newington, Bermondsey, Wandsworth, Camberwell, Lewisham, and Plumstead sanitary areas. There were 1572 diphtheria patients in the Metropolitan Asylums Hospitals at the end of January, against 1687, 1718, and 1679 at the end of the three preceding months; the weekly admissions averaged 189, against 258, 227, and 184 in the three preceding months. The prevalence of enteric fever in London showed a slight decline from that recorded in the preceding month; among the various sanitary areas this disease showed the highest proportional prevalence in Holborn, Bethnal Green, St. George-in-the-East, Poplar, Rotherhithe, and Lewisham. The Metropolitan Asylums Hospitals contained 289 enteric fever patients at the end of January, against 341, 460, and 406 at the end of the three preceding months; the weekly admissions averaged 40, against 58, 76, and 52 in the three preceding months. Erysipelas was proportionally most prevalent in St. Giles, Clerkenwell, Bethnal Green, Mile End Old Town, St. George

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING JANUARY, 1900.

(Specially compiled for THE LANCET.)

SANITARY AREAS.	Estimated population in the middle of 1900.	NOTIFIED CASES OF INFECTIOUS DISEASE.											DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.										Deaths from all causes.	Death-rate per 1000 living.	Deaths of infants under one year to 1000 births.
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cholera.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.†	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.			
LONDON	4,589,129	21	1167	1313	1	465	10	24	525	—	3526	8·0	—	231	35	225	181	—	86	—	57	815	1·9	12,027	27·3	143
West Districts.																										
Paddington	130,104	—	27	20	1	5	1	—	17	—	71	5·7	—	—	2	6	1	—	1	—	2	12	1·0	295	23·7	164
Kensington	173,403	—	37	36	—	12	2	2	16	—	107	6·4	—	10	1	3	2	—	5	—	2	23	1·4	390	23·4	144
Hammersmith	110,203	—	23	13	—	11	—	1	11	—	59	5·6	—	4	—	2	1	—	1	—	1	9	0·9	233	22·0	111
Fulham	136,383	2	58	30	—	13	—	1	12	—	116	8·9	—	31	2	10	7	—	5	—	6	61	4·7	362	27·7	168
Chelsea	86,715	—	23	14	—	4	—	—	9	—	50	5·4	—	12	1	1	—	—	1	—	—	15	1·6	271	29·2	123
St. George Hanover-square	81,133	1	15	12	—	5	—	—	3	—	36	4·6	—	2	—	4	3	—	—	—	3	12	1·5	195	25·1	145
Westminster	51,657	—	9	7	—	3	—	—	1	—	20	4·0	—	2	1	3	4	—	2	—	—	12	2·4	160	32·3	191
St. James Westminster	21,457	—	1	5	—	—	—	—	2	—	8	3·9	—	—	—	1	—	—	—	—	—	1	0·5	46	22·4	106
North Districts.																										
Marylebone	139,777	—	27	11	—	11	—	—	23	—	72	5·4	—	5	2	4	2	—	1	—	1	15	1·1	365	27·2	101
Hampstead	81,766	—	21	12	—	—	—	—	8	—	41	5·2	—	—	1	2	—	—	1	—	1	5	0·6	154	19·6	111
St. Pancras	245,451	—	48	53	—	32	—	—	32	—	165	7·0	—	11	1	7	15	—	11	—	8	53	2·3	696	29·5	131
Islington	351,541	—	77	70	—	25	3	—	30	—	205	6·1	—	35	5	10	8	—	9	—	2	69	2·0	848	25·2	142
Stoke Newington	35,718	—	10	5	—	1	—	1	5	—	22	6·4	—	—	1	—	—	—	2	—	1	4	1·2	73	21·3	114
Hackney	225,519	11	66	65	—	29	—	2	24	—	197	9·1	—	3	2	11	15	—	6	—	—	37	1·7	541	25·0	150
Central Districts.																										
St. Giles	36,870	—	4	3	—	5	—	—	10	—	22	6·2	—	1	—	1	—	—	—	—	—	2	0·6	74	20·9	96
St. Martin-in-the-Fields	11,885	—	1	6	—	—	—	—	1	—	8	7·0	—	—	—	1	—	—	—	—	—	1	1·0	44	38·7	158
Strand	22,748	—	2	1	—	—	—	—	—	—	3	1·4	—	—	—	—	—	—	—	—	—	—	—	78	35·8	107
Holborn	29,188	—	5	7	—	7	—	—	4	—	23	8·2	—	2	—	2	1	—	1	—	1	7	2·5	119	42·5	181
Clerkenwell	66,007	—	7	16	—	5	—	—	13	—	41	6·5	—	2	1	2	11	—	1	—	—	17	2·7	202	31·9	134
St. Luke	40,655	—	7	11	—	2	—	—	5	—	25	6·4	—	2	—	6	3	—	—	—	1	12	3·1	159	40·8	155
City of London	26,922	—	3	2	—	5	—	—	2	—	12	4·6	—	2	—	—	—	—	—	—	—	2	0·8	101	39·1	260
East Districts.																										
Shoreditch	120,641	2	31	34	—	12	—	—	17	—	96	8·3	—	1	3	7	6	—	1	—	1	19	1·6	346	29·9	142
Bethnal Green	128,831	2	36	20	—	28	1	2	30	—	149	12·1	—	2	—	8	15	—	3	—	3	31	2·5	417	33·8	145
Whitechapel	82,220	—	23	19	—	13	—	1	8	—	64	8·1	—	5	—	1	1	—	1	—	2	10	1·3	217	27·5	143
St. George-in-the-East	48,875	—	3	8	—	11	—	—	2	—	24	5·1	—	2	—	1	2	—	—	—	1	6	1·3	156	33·3	127
Limehouse	58,904	1	14	14	—	9	—	—	7	—	45	8·0	—	—	2	1	3	—	1	—	1	8	1·4	180	31·8	196
Mile End Old Town	113,781	—	18	29	—	11	—	1	26	—	85	7·8	—	2	1	4	6	—	4	—	1	18	1·6	312	28·6	154
Poplar	170,968	—	36	38	—	32	—	2	12	—	120	7·3	—	4	2	11	22	—	2	—	1	42	2·6	451	27·5	171
South Districts.																										
St. Saviour Southwark	23,854	—	7	14	—	4	—	1	1	—	27	11·8	—	—	—	1	—	—	2	—	—	3	1·3	80	35·0	125
St. George Southwark	60,597	—	10	34	—	3	—	—	10	—	57	9·8	—	2	1	6	3	—	—	—	1	13	2·2	247	42·5	209
Newington	125,178	—	29	62	—	15	—	2	15	—	123	10·3	—	11	—	15	4	—	—	—	4	34	2·8	367	30·6	151
St. Olave Southwark	10,909	—	2	—	—	1	—	—	—	—	3	2·9	—	1	—	—	1	—	—	—	—	2	1·9	28	26·8	111
Bermondsey	85,920	—	32	46	—	6	—	1	8	—	93	11·3	—	3	1	10	5	—	1	—	2	22	2·7	272	33·0	157
Rotherhithe	41,246	—	11	11	—	13	—	—	5	—	40	10·1	—	3	1	4	—	—	1	—	—	9	2·3	137	34·6	139
Lambeth	312,152	—	66	98	—	23	1	3	24	—	215	7·2	—	12	1	14	11	—	3	—	6	47	1·6	808	26·9	135
Battersea	178,100	—	38	43	—	31	1	—	22	—	135	7·9	—	23	—	4	5	—	3	—	1	36	2·1	476	27·9	165
Wandsworth	217,004	—	88	100	—	14	—	2	24	—	228	11·0	—	10	—	12	3	—	8	—	—	33	1·6	460	22·1	118
Camberwell	268,457	1	74	133	—	23	1	1	30	—	263	10·2	—	8	—	27	3	—	2	—	1	41	1·6	645	25·1	129
Greenwich	184,582	—	74	59	—	26	—	1	30	—	190	10·7	—	4	2	9	12	—	5	—	—	32	1·8	432	24·4	123
Lewisham (excluding Penge)	93,548	—	34	53	—	8	—	—	11	—	106	27·1	—	—	1	6	1	—	1	—	1	10	2·6	223	57·1	128
Woolwich	41,600	—	5	19	—	—	—	—	4	—	28	3·1	—	6	—	1	3	—	1	—	1	12	1·3	121	13·5	156
Lee	40,722	—	11	16	—	1	—	—	4	—	32	8·0	—	—	—	4	—	—	—	—	—	4	1·0	102	25·6	205
Plumstead	65,558	—	54	32	—	—	—	—	7	—	93	14·8	—	8	—	3	2	—	—	—	1	14	2·2	146	23·2	143
Port of London	—	1	—	—	—	6	—	—	—	—	7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including 18 cases of membranous croup.

† Including deaths from membranous croup.

Southwark, and Lewisham sanitary areas. The 24 cases of puerperal fever included three in Lambeth and two each in Kensington, Hackney, Bethnal Green, Poplar, Newington, and Wandsworth sanitary areas.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various sanitary areas of the metropolis, the deaths occurring in the public institutions of London having been distributed among the various sanitary areas in which the patients had previously resided. During the five weeks ending Feb. 3rd the deaths of 12,027 persons belonging to London were registered, equal to an annual rate of 27·3 per 1000, against 18 5, 17 6, and 27·3 in the three preceding months The lowest death-rates last month in the various sanitary areas were 13 5 in Woolwich, 19 6 in Hampstead, 20·9 in St. Giles, 21·3 in Stoke Newington, 22·0 in Hammersmith, and 22·1 in Wandsworth; the highest rates were 38·7 in St. Martin-in-the-Fields, 39 1 in City of London, 40·8 in St. Luke, 42·5 in Holborn and in St George Southwark, and 57·1 in Lewisham. During the five weeks of January 815 deaths were referred to the principal zymotic diseases in London; of these, 231 resulted from measles, 35 from scarlet fever, 225 from diphtheria, 181 from whooping-cough, 86 from enteric fever, 57 from diarrhœa, and not one either from small-pox, from typhus, or from any ill-defined form of continued fever. These 815 deaths were equal to an annual rate of 1 9 per 1000, against 1·8, 1·9, and 2·1 in the three preceding months. No deaths from any of these diseases was recorded last month in Strand sanitary area; among the other sanitary areas they caused the lowest death-rates in Hammersmith, St. James Westminster, Hampstead, St. Giles, and City of London, and the highest rates in Fulham, Clerkenwell, St Luke, Newington, and Bermondsey. The 231 deaths referred to measles were slightly below the average number in the corresponding periods of the ten preceding years; this disease was proportionally most fatal in Fulham, Chelsea, Islington, Newington, Battersea, and Plumstead sanitary areas. The 35 fatal cases of scarlet fever were as many as 57 below the corrected average number; the greatest proportional fatality from this disease occurred in Paddington, Fulham, Marylebone, Islington, Shoreditch, and Limehouse sanitary areas. The 225 deaths from diphtheria were slightly in excess of the average number in the corresponding periods of the ten preceding years; among the various sanitary areas this disease was proportionally most fatal in St. Luke, St. George Southwark, Newington, Bermondsey, Camberwell, and Lewisham. The 181 fatal cases of whooping-cough were 164 below the corrected average number; this disease showed the highest proportional fatality in Westminster, Hackney, Clerkenwell, Bethnal Green, Poplar, and Greenwich sanitary areas. The 86 deaths referred to enteric fever were 29 in excess of the average number in the corresponding periods of the 10 preceding years; among the various sanitary areas the highest proportional mortality from "fever" occurred in Fulham, Westminster, St. Pancras, Mile End Old Town, St. Saviour Southwark, and Wandsworth. The 57 fatal cases of diarrhœa were slightly below the corrected average; this disease was proportionally most fatal in Fulham, St. George Hanover-square, St. Pancras, and Newington sanitary areas. In conclusion, it may be stated that the aggregate mortality from these principal zymotic diseases in London during January was nearly 20 per cent. below the average.

Infant mortality in London last month, measured by the proportion of deaths of children under one year of age to registered births, was equal to 143 per 1000. The lowest rates of infant mortality were recorded in Hammersmith, St. James Westminster, Marylebone, Hampstead, St. Giles, Strand, and St. Olave Southwark; and the highest rates in Westminster, Holborn, City of London, Limehouse, St. George Southwark, and Lee sanitary areas.

Influenza was stated to be the primary cause of 1125 deaths in London during the five weeks ending Saturday, the 3rd inst., the corrected average number in the corresponding periods of the 10 preceding years being 315. Among the various sanitary areas the greatest proportional mortality from influenza was registered in Chelsea, Hampstead, Stoke Newington, Greenwich, Lewisham, Lee, and Plumstead. In addition to the 1125 deaths directly attributed to influenza there were 235 cases in which it was stated to be a contributory cause of death. The deaths referred to diseases of the respiratory organs last month numbered 3865 and showed an excess of 744 over the corrected average.

THE SERVICES

ROYAL NAVY MEDICAL SERVICE.

Surgeon A. G. Eastment is lent to Yarmouth Hospital for survey of stores.

ROYAL ARMY MEDICAL CORPS.

Major M. T. Yarr, from the Seconded List, to be Major, vice T. Dorman, deceased.

Major J. S. Edye and Major J. Moir have joined at Woolwich.

The following officers are ordered to the front:—Major J. P. S. Hayes appointed to No. 7 General Hospital; Lieutenant D. Harvey to No. 24 Field Hospital; Lieutenant A. F. Carlyon to No. 5 General Hospital; and Surgeon-Lieutenant J. Clerke, Militia Medical Staff Corps, to No. 5 General Hospital.

THE IMPERIAL YEOMANRY.

To be Medical Officer, with the temporary rank of Captain: F. A. Hadley.

VOLUNTEER CORPS.

Artillery: 1st Ayrshire and Galloway: Surgeon-Lieutenant H. A. Pattullo resigns his commission. 1st Caithness: Samuel Davidson to be Surgeon-Lieutenant. *Rifle:* 6th Volunteer Battalion the Royal Scots (Lothian Regiment): The undermentioned Surgeon-Lieutenant-Colonels resign their commissions, with permission to retain their rank and to wear the uniform of the battalion on their retirement:—A. Ballantyne and C. J. Allan. The undermentioned Surgeon-Lieutenants to be Surgeon-Captains:—G. Melville and J. Cameron. 2nd Volunteer Battalion the Royal Fusiliers (City of London Regiment): Lloyd John Hollis Oldmeadow to be Surgeon-Lieutenant. 2nd (Prince of Wales's) Volunteer Battalion the Devonshire Regiment: William Edward Manderson Corbett to be Surgeon-Lieutenant. 2nd Volunteer Battalion the Suffolk Regiment: Sidney Hillier to be Surgeon-Lieutenant. 1st Volunteer Battalion the Royal Welsh Fusiliers: Surgeon-Captain John Edward Henry Davies resigns his commission and is appointed Captain; Surgeon-Lieutenant R. Drinkwater to be Surgeon-Captain. 2nd Volunteer Battalion the East Lancashire Regiment: Surgeon-Lieutenant C. E. R. Bucknill to be Surgeon-Captain.

TRANSVAAL WAR NOTES.

The following is a list of officers of the Royal Army Medical Corps who were members of the staff of the Royal Victoria Hospital, Netley, or who have passed through the Army Medical School since the commencement of the war and who are now serving in South Africa:—Colonel W. F. Stevenson, Professor of Surgery, Army Medical School, principal medical officer, lines of communication; Lieutenant-Colonel M. D. O'Connell, No. 2 General Hospital; Major G. H. Sylvester, secretary to principal medical officer, lines of communication; Major J. Gibson, No. 5. General Hospital; Major T. Daly, Field Hospital; Major I. Paterson, 1st Corps Field Hospital; Major M. O'C. Drury, Langman Field Hospital; Captain F. W. Begbie, 1st Corps Field Hospital; Captain W. T. Mould, Iveagh Hospital Ship; Lieutenant W. Jagger, No. 1 General Hospital (x-rays); Lieutenant R. H. Lloyd, 1st Corps Troops Field Hospital; Lieutenant F. Harvey, 2nd Middlesex Regiment; Lieutenant C. E. Trimble, 37th Field Company, Royal Engineers; Lieutenant H. S. Roch, No. 15 Bearer Company; Lieutenant P. S. O'Reilly, 2nd Corps troops, Field Hospital; Lieutenant H. C. R. Hime, No. 6 General Hospital; Lieutenant E. McDonnell, No. 7 General Hospital; Lieutenant A. M. McLaughlin, 1st King's Own Borderers; Lieutenant F. H. Merry, 2nd Hampshire Regiment; Lieutenant R. L. Davies, No. 9 Company Royal Engineers; Lieutenant C. S. Smith, 2nd South Wales Borderers; Lieutenant C. R. Evans, 2nd North Stafford Regiment; and Lieutenant J. M. Cuddon-Fletcher, 7th Infantry Division.

A hospital corps of 57 Irishmen has left New York for service with the Boers under the American Red Cross Flag.

The Western Counties Association for providing convalescent homes for the South African wounded (working in connexion with the Soldiers' and Sailors' Help Society) has raised nearly £1200 It has been decided to take 10 beds at the Combe Down Home and three at the Weston-super-Mare Sanatorium.

The committee of Westminster Hospital have granted leave of absence to Mr. Charles Stonham, Dr. Purves Stewart, and Mr. William Turner. Substitutes will be appointed in their absence in order that the public may not suffer.

The medical staff of the Princess Christain Hospital, which is shortly to proceed to South Africa, has largely been chosen from members of the Bristol Medical School. As this is the only hospital going out in which a provincial medical school is so represented, the medical students organised a dinner which was given on Feb. 17th. Mr. Paul Bush and the other members of the staff, including Mr. Flemming, Mr. Pearse, and Mr. A. B. Cridland, together with the donor of the hospital, Mr. Alfred Mosely, were the "guests of the evening." The dinner, which was very successful, was largely attended by the medical practitioners of Clifton and Bristol and their friends.

Dr. J. Bruce (civil surgeon) left in the *Gascon* on Feb. 17th for South Africa. Mr. J. G. Wallis (civil surgeon) also left for the front in the *Guelph*. On the same day No. 20 Field Hospital of the Royal Army Medical Corps, in charge of Major Ritchie, R.A.M.C., left in the *Sicilian*.

It is an excellent and happy idea to associate the Indian dhoolie bearers with the benefits of the Royal Army Medical Corps Fund and to make them participators in its benefits. Officers of the Royal Army Medical Corps have had many opportunities of judging of the work of these men. They really render invaluable services which do not stand out so prominently with the public as they deserve, for however quietly and unassumingly performed they nevertheless frequently make calls upon the courage, self-reliance, and coolness of those who have to carry them out on the battlefield and often under very trying circumstances. The Indian dhoolie bearers are, as a rule, devoted and fearless in their efforts to strip the battlefield of its wounded and carry them to positions where their wounds can be properly cared for. The services which these men have rendered to the British soldier in this respect in our Indian campaigns and now in South Africa thoroughly merit recognition. It is but right and fitting, therefore, that when they return to their native villages they should be able to feel, and to tell the natives of India, that this nation was not unmindful of the services which they rendered to the British army in South Africa.

On Feb. 21st the Duke of Cambridge inspected the Langman Field Hospital at the headquarters of the St. George's Rifles in Dover-street, W. The hospital, which has 100 beds, leaves in the *Oriental* on Wednesday next. As we have already announced, Mr. Robert O'Callaghan is chief civil surgeon, Mr. C. Gibbs surgeon, Dr. H. J. Scharlieb surgeon and anæsthetist, and Dr. Conan Doyle physician; Mr. Hackney, Mr. Turle, Mr. Blasson, Mr. Mayes, and Mr. Burton, senior students and dressers at University College Hospital, will act as dressers; while Major M. O'C. Drury, R.A.M.C., has been appointed by the War Office as army medical officer in charge.

All the details of the Imperial Yeomanry Hospital will, it is hoped, have been despatched by to-day (Feb. 24th) and the arrangements for the field hospital and bearer companies are making rapid progress.

The Imperial War Fund have forwarded £200 to Netley Hospital for the temporary assistance of discharged disabled soldiers.

A provisional committee for the Welsh hospital for South Africa has been formed, which includes among its members Sir John Williams, Dr. F. T. Roberts, Dr. Isambard Owen, Mr. Edmund Owen, and Professor Thomas Jones. The organising secretary, Professor Alfred Hughes, of King's College, will receive donations at 7, Chester-terrace, Regent's-park, N.W. Sums amounting to nearly £1000 have been already promised.

Captain J. E. C. Canter, R.A.M.C., and Lieutenant Goddard, R.A.M.C., were both wounded near Paardeberg during Lord Roberts's advance between Feb. 16th and 18th.

VOLUNTEER MEDICAL STAFF CORPS.

At the invitation of Surgeon-Lieutenant-Colonel J. Edward Squire the friends of the London Companies of the Volunteer Medical Staff Corps mustered in large numbers on Feb. 17th at the head-quarters of the corps in Calthorpe-street to witness the presentation of prizes by Surgeon-General H. S. Muir, Deputy Director-General, Army Medical Service Corps. Surgeon-Lieutenant-Colonel Squire was able to state that 110 recruits had joined since the end of the last volunteer year when the strength of the corps was 429. Efforts were being made to furnish the corps with its own transport. The Royal Veterinary College students had shown such interest in their transport section that it was believed they would be able to draw all the men they wanted from that college. 74 of their men out of 450 had volunteered for service when the South African war broke out and he trusted that the Volunteer Act would be altered to permit of Volunteers going to the front. Surgeon-General Muir having distributed the prizes Surgeon-Major V. Matthews moved a vote of thanks, which was seconded by Surgeon-Captain J. Harper. Surgeon-General Muir, in acknowledging the vote, said that he had had the pleasure of being at the inspection last summer and was then highly delighted with what he saw in the way of work. With regard to the transport he was deputed by his chief, the Director-General, to say that he sympathised with them in the matter, and that it was his intention to try to obtain for them a better grant than what was now the case. He had every reason to suppose that his recommendation would be acceded to. With regard to the offer of Volunteers for active service it must be remembered that the situation was new. It was the first occasion on which such a large force had left the country and it must also be remembered that the motto of the Volunteer force was "Defence, not defiance." It had not been contemplated that Volunteers should go on a campaign abroad, but things, however, had changed and now the Volunteers were to have a chance at the front. With reference to the Volunteer Medical Staff Corps the warrant that was now coming out, though perhaps not satisfactory to everybody, would set things right. Those men who wished to go to the front would have an opportunity in the near future, and he hoped that he might say on behalf of the Director-General that they would sooner have them than anyone else. He had heard it said that the St. John Ambulance men had been preferred to them, but that was not so. The officials had not the authority to take the men of the Volunteer Medical Staff Corps, but he hoped that the authority was now coming. Some misunderstanding had arisen in regard to the strictness of the medical examination, but that must be fairly strict and they could not relax it altogether. He believed that some men had been disappointed at being rejected, but possibly when the rules were slightly relaxed, as they would be all round, these men might have a chance of distinguishing themselves in South Africa.

VOLUNTEER AMBULANCE SCHOOL OF INSTRUCTION.

The spring class of the School for Stretcher Bearers held at Queen's Hall, James-street, Buckingham-gate, the head-quarters of the Queen's Westminster Rifle Volunteer Corps, by kind permission of Colonel Sir Howard Vincent, K.C.M.G., C.B., M.P., is now full. The officers' class will be held at the head-quarters of the 20th Middlesex (Artists) Rifle Volunteer Corps, Duke's-road, Euston-road, by kind permission of Colonel R. W. Edis, V.D., commencing on May 7th, a further notice of which will appear later. During the absence in South Africa of Surgeon-Captain R. R. Sleman, S.M.O.C.I.V., Surgeon-Captain E. M. Callender, Prince of Wales's Own 12th Middlesex (Civil Service) Rifle Volunteer Corps, is detailed as Adjutant to the school.

ROYAL ARMY MEDICAL CORPS FUND.

A local committee is being organised in Birmingham in support of the Royal Army Medical Corps Fund and a meeting of medical practitioners and the lady members of their families will be held on Monday next, the 26th inst., at 4 P.M. in the Medical Institute.

REPORTED MURDER OF AN ARMY MEDICAL OFFICER.

Major Walter Kiddle, R.A.M.C., is reported to have been murdered at Monghen by the Was tribe while engaged with the Burmo-Chinese Boundary Commission.

TAUNTON AND SOMERSET HOSPITAL. — The annual meeting of this institution was held on Feb. 8th under the presidency of Colonel Welby, M.P. The medical report stated that 777 in-patients had been admitted. The financial statement showed that there was a deficit on the year of £1777, which had arisen partly through exceptional expenditure on the laundry and re-flooring the wards, and also to the fact that the amount received from donations and bequests had fallen off considerably. The fund raised in memory of the late Colonel Chard, V.C., had been increased to £909. It was decided to sell stock of the value of £1000 to meet the deficiency in the accounts. The committee decided to offer 10 beds for the use of soldiers wounded in South Africa.

Correspondence.

"Audi alteram partem."

"SOME POINTS IN THE NATURAL HISTORY OF UTERINE FIBROIDS."

To the Editors of THE LANCET.

SIRS,—In your issue of Jan. 20th last is an interesting paper bearing this title and written by Dr. Champneys. The eminence of the author and his impartial judgment are likely to make these statistics for some time to come the standard of comparison when considering the question of operation. As I read the paper the general impression left by the figures is to show the extraordinarily small fatality of fibroids of the uterus and the high death-rate that follows the operation of hysterectomy for their removal.

Dr. Champneys truly observes that the arguments that apply to the operation of ovariotomy cannot be urged for hysterectomy, for, whereas the natural termination of most ovarian tumours is in death, with rare exceptions fibroid tumours do not end fatally. Speaking generally, therefore, it is not necessary to life to remove them. With this I agree. A large number of fibroids are small, give no inconvenience, and show no tendency to increase. In such cases obviously no operation is needed and, I should imagine, is rarely performed. There is another class of cases in which the fibroid tumour is actually causing death from obstruction or acute peritonitis. In these cases, notwithstanding the removal of the tumour, the patient may die from the obstruction or peritonitis previously existing. Now, it is obvious that in considering the mortality of the operation such cases must be excluded. Excluding, then, the simple cases of fibroid causing no trouble and in which no operator would interfere and admitting that occasionally from sloughing or obstruction an operation is the only resource, there remains a considerable number of cases in which without immediately threatening life, the tumour, owing to its size, the hæmorrhage it produces, its pressure on other organs, and its rapid increase, must seriously interfere with health and the enjoyment of life. In this class of case, whether or not hysterectomy is advisable must depend on the risk of the operation itself. If the interference with health is considerable and the risk slight a patient would naturally desire an operation. On the contrary, should the risk of the operation be great and the ill-health produced by the tumour inconsiderable it might be right to refuse an operation. It is therefore in this class of case that the mortality from the operation has to be considered. As stated by Dr. Champneys, there is a difficulty in obtaining statistics for comparison, for the practice at the London hospitals somewhat differs. At some hospitals the operation is only undertaken when the tumour itself is formidable or producing serious complications. The operation in these cases is generally difficult and prolonged and the mortality will be high. In other hospitals a wider scope is given to the class of case considered suitable for removal, consequently the cases will be simpler and less complicated and the mortality lower.

The special object in addressing this letter to you, Sirs, is to point out that the high mortality referred to by Dr. Champneys in his tables cannot be accepted in its crude form without some further explanation, or relied on as a true index of the risk involved. It is true that Dr. Champneys explains in one portion of his paper that the figures given do not necessarily mean deaths from the operation, but he does not make this point sufficiently clear, for he states immediately below the table (page 149, line 4) that he takes these statistics "as a basis for arriving at the mortality from operations on fibroids." As to the details of the operations referred to at other hospitals, I am unable to speak, but as regards St. Bartholomew's I have before me the details of 11 of the deaths referred to in his tables, and I would call attention to the following four cases amongst these.

CASE 1.—A woman, aged 49 years, was admitted into the women's ward, St. Bartholomew's Hospital, with symptoms of peritonitis, a rapid feeble pulse, and constant vomiting. The abdomen was tight and enormously distended with a fluid tumour. The skin over an area the size of the hand above the most prominent part of the tumour was gangrenous and sloughing. The tumour was considered to be ovarian, but the patient's general condition was so grave as to make an immediate operation impossible. The tumour was aspirated as a palliative. 18 pints of purulent fluid were drawn off. After the tapping she rallied considerably and six days later an abdominal section was performed. The tumour proved to be an enormous fibro-cystic tumour lying between the layers of the broad ligament with a large quantity of pus in the main cyst. It was dissected out with difficulty, and found to be connected with the uterus by a narrow pedicle which was ligatured. Hysterectomy was not performed; she died on the following day. The solid part of the tumour weighed 13 lbs.

CASE 2.—A female, aged 44 years, gave the following history. 12 days previously while at stool she was seized with violent abdominal pain followed by vomiting and shivering. When admitted she looked ill, with a flushed face, anxious expression, a rapid pulse, and raised temperature. The abdomen was tender, much distended, and tympanitic. Abdominal section was performed the next day. Some of the coils of intestine were found glued together with lymph and there was a large quantity of blood-clot. The cause of the bleeding and peritonitis was a fibroid tumour with a long stalk attached to the fundus of the uterus. This had become partially twisted. The tumour was removed, but hysterectomy was not performed. The lymph and blood-clot between the coils of intestine were washed away as far as practicable. The patient, however, gradually grew worse and died 40 hours later.

CASE 3.—A woman, aged 29 years, was intensely anæmic from profuse losses at her periods. The pelvis was blocked by a tumour which rose two thirds of the way to the umbilicus. On opening the abdomen the uterus which had some large fibroid nodules on it was pushed right up out of the pelvis by some tumours growing beneath. Hysterectomy was first performed with comparative ease on account of the way in which the body of the uterus was pushed up. The tumour on the left side was next removed. This proved to be a pyosalpinx intimately connected with the rectum with which it had probably communicated. Anyhow the rectum was damaged, and it was sewn up with Lembert sutures. The tumour on the right side was then examined and was found to be an adherent dermoid cyst of the right ovary. This was removed. The triple operation lasted one and three-quarter hours, the greater part of the time being occupied in dealing with the pyosalpinx and injured rectum. The patient was greatly collapsed, she never rallied, and died the same night.

CASE 4.—A woman, aged 44 years, was admitted for profuse menstruation and pain. On the abdomen being opened a large cyst was found situated between the layers of the broad ligament. The uterus was intimately connected with the cyst. The cyst was dissected out with considerable difficulty and much loss of blood. One side of the uterus which was enlarged showed a raw bleeding surface, the hæmorrhage being difficult to deal with it was then decided to remove the uterus as the best means of arresting it. The uterus contained two fibroids, one the size of an orange, one half the size. The patient was much collapsed from the prolonged operation and hæmorrhage and never rallied, and died 19 hours afterwards.

I think that these four cases should not have been included without an explanation in a table showing the mortality from abdominal hysterectomies for fibroids; for in the first two cases no hysterectomy was performed, the removal of the pedunculated tumours merely failing to save the patients, while in the two latter hysterectomy was only an incident necessitated during the removal of other coincident disease.

I remain, Sirs, yours obediently,

HARRISON CRIPPS.

Stratford-place, Oxford-street, W., Feb. 12th, 1900.

AUGUSTE COMTE.

To the Editors of THE LANCET.

SIRS,—You have an annotation in THE LANCET of Feb. 10th on Auguste Comte founded on an interesting article by Dr. W. W. Ireland with respect to the philosopher's mental aberration. Any mention of his insanity has always been disagreeable to his followers. When a few years ago I communicated to THE LANCET a short account of my colleague James Hinton and said, "what the world called madness" had often been associated with genius, as in the cases of Irving, Swedenborg, and Comte, I got an

immediate reply from the late Richard Congreve, one of Comte's chief apostles, as follows:—

17, Mecklenburgh-square, Jan. 8th, 1876.

DEAR SIR,—Forgive me if, having known Mr. Hinton slightly and M. Comte much better, I object to your putting them in juxtaposition as you do in this week's LANCET. Press the former in argument and you got deeper into obscurity, or ask him a question as to what he held on a certain point, and in like manner he seemed able to hold both "yes" and "no" upon it. I will venture to say that no one ever carried away that impression from Comte. His profound mathematical training had given him the clearness and precision on all subjects which Mr. Hinton so singularly wanted and which I think had you known Comte you would have valued. If I may be allowed to state the inference I drew from the impression produced in my mind by reading what you write whenever I meet it I often think you come nearer the positive statements than any other physician. Especially do I remember a vigorous elimination of that foolish conception of nature which so many bore us with.

Pray excuse my freedom in writing to one who is a perfect stranger to me. Yours faithfully,

Dr. Wilks. RICHARD CONGREVE.

I had the pleasure of making Comte's acquaintance when dining with a friend at Paris in the spring of 1851. I found him very quiet and unpretentious; there was nothing striking in his appearance; he had a shelving forehead and did not look like a man of power. He was then giving a course of gratuitous lectures on Sunday mornings styled, "Cours philosophique sur l'histoire générale de l'humanité." I went to hear the first one on "Théorie fondamentale de la nature humaine, d'après la doctrine subjective du cerveau." On his syllabus he had his usual motto, "Ordre et progrés—vivre pour autrui." In the following year Louis Napoleon proclaimed himself Emperor and Comte's public life came to an end, but he did not die until five years afterwards.

I am, Sirs, yours faithfully,

Grosvenor-street, Feb. 17th, 1900. SAMUEL WILKS.

"THE PHYSIQUE OF THE BOERS."

To the Editors of THE LANCET.

SIRS,—Your sane and timely article on British physique as compared with that of the Boers ought to be pressed further. Imperialists and humanitarians must unite in desiring for every British citizen a body which has been developed to the utmost perfection whereof it is capable. Town life is a bar to this, but town life has proved itself so attractive that we must accept it as inevitable; what is required is that to the town-dweller there shall be assured all the healthy conditions of country life. The problem may seem insoluble to many; if so, they will be glad to learn that a solution has been thought out and is being shaped for experiment. Mr. E. Howard has devised a garden city which combines the good points of both town and country. It seems to me and to others who have studied his book a feasible plan. In the *Medical Magazine* for this month I have published a short paper on this practicable city of health; but I would urge every sanitarian and philanthropist to study for himself Mr. Howard's notable book. He will feel inclined to carp at details, no doubt. Then let him join the Garden City Association and aid in perfecting a noble and salutary conception.

This heartbreaking war ought surely to issue in a wiser and healtbier national life. That it may do so we as a profession must strive to turn the minds of the people from revenge abroad to reform at home, from covetousness to righteousness, from the mote in the eye of another nation to the beam in the eye of our own.

I am, Sirs, yours faithfully,

Feb. 20th. W. WINSLOW HALL.

*** Dr. Hall will observe that the article in question was from a correspondent. We agree with the writer in the main.—ED. L.

"NOT THE DISEASE ONLY BUT ALSO THE MAN."

To the Editors of THE LANCET.

SIRS,—Your annotation on the Shattock lecture for 1899 on this subject interested me exceedingly. That the physician has to study not disease *per se* but the diseased man is a truth which took us some 22 centuries to learn but which Aristotle evidently knew Anno 350 B.C., for he writes: "Φαίνεται μὲν γὰρ οὐδὲ τὴν ὑγίειαν οὕτως ἐπισκοπεῖν ὁ ἰατρος, ἀλλὰ τὴν ἀνθρώπου, μᾶλλον δ' ἴσως τὴν τοῦδε, καθ' ἕκαστον γὰρ ἰατρευει." Until 50 or 60 years ago disease was regarded as an entity distinct from the body, to be expelled from it by drugs, like a tapeworm, whereas we now regard it as *a state* affecting the entire man, body and mind, structure and functions, so that it would be more correct to say that he *is* the disease than that he has "got" it And as this state varies with the constitution, inherited tendencies, antecedents and surroundings of the man, it requires a corresponding variety of treatment. Hence the necessity of having the patient before us to study, and the impossibility of advising and prescribing at a distance; also the folly of supposing that for every disease and symptom there is a specific remedy. The wise physician adapts his treatment to each patient's peculiarities; to one he may give a certain drug, to another with the same disease a different one, and to a third no drug at all; in short, "καθ' ἕκαστον ἰατρευει." A man who had a pain at the vertex was told and believed that he had softening of the brain; after taking many drugs, finding he was no better he consulted the late Sir William Gull, in whom he had great faith, and who assured him that he had no brain disease and that a week's change and rest from work and worries would cure him. This assurance alone cured him at once. A young lady who apparently vomited everything she took and was treated for gastritis and gastric ulcer by several medical men, who gave her all the usual drugs, at last consulted a physician who ascertained that she had been thwarted by her father in love and religion. He compelled her to give up her lover, and afterwards refused to allow her to enter a convent. Removal from home and father to friends at the seaside cured her completely without any drug whatever. A medical man, who has had many years' practice and experience, finds out that symptoms such as vomiting may be the result of a great variety of causes, each calling for special treatment, and he naturally feels insulted when American manufacturing chemists send him pamphlets, as they do almost every week, professing to teach him therapeutics, giving him prescriptions (into which certain advertised specialities enter) for every disease and symptom under the sun, and testimonials from a vast number of M.D.'s, *always American!* I treat these pamphlets as I should Mother Siegel's and throw them at once into my waste-paper basket.—I am, Sirs, yours faithfully,

D. HOOPER, B.A. Cantab., M.B. Lond.,
Physician to the Surrey Dispensary

Trinity-square, S.E., Feb. 20th, 1900.

"THE SO-CALLED DANGER FROM THE USE OF BORIC ACID IN PRESERVED FOODS."

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Jan. 6th (p. 13) there appeared an article under the above heading by Dr. Oscar Liebreich, from which I quote the following: "During these 10 years of experience of practising physicians there has not been forthcoming any instance of injury to health from the administration of small doses of borax and boric acid." I frequently order boric acid in from 10 to 20 grain doses three times a day, especially in bladder cases, and with a considerable experience of the drug thus administered I can say that in the majority of cases a detrimental effect on the general health becomes apparent, usually within a week or 10 days. The symptoms that develop are those of dyspepsia more or less acute, not bad enough to confine the patient to bed or even to the house, but still sufficient to make life miserable. So often has this been observed that I am in the habit of warning people when they are taking boric acid of the possible occurrence of such symptoms and that their onset must be regarded as the signal for its discontinuance. On discontinuance the symptoms quickly subside, to reappear when the patient has resumed the use of the drug.

I remain, Sirs, yours faithfully,

A. R. ANDERSON, F.R.C.S. Eng.,
Feb. 20th, 1900. Surgeon to the General Hospital, Nottingham.

THE NORWEGIAN EXPERIMENT OF NOTIFICATION OF VENEREAL DISEASES.

To the Editors of THE LANCET.

SIRS,—Among other schemes for the prevention of contagious diseases Norway has, since 1860, included in the list of notifiable diseases those of gonorrhœa, soft sore, and

syphilis. I have just received from Dr. Beutzen of Christiania, Inspector for all Norway, a copy of the law of 1860, which empowered plans to be framed for the notification of these maladies. This sanitary law of 1860 enjoins on all practitioners in Norway to declare to the Sanitary Commission all cases of contagious disease, among which are also enumerated venereal diseases. These last are to be notified without indicating the name or residence of the patient. Hence, there has existed in Norway since 1860 a comparative statistical account of these diseases, which is, it seems to me, very interesting.

From the year 1860 up to 1879 soft sores were not separated from syphilis in the statistical reports, and therefore Dr. Beutzen commences his statistics with the year 1879. In that year there occurred in the city of Christiania, with a population of 117,000, 1127 notified cases of gonorrhœa, 314 cases of soft sore, and 365 cases of syphilis, besides 36 cases of hereditary syphilis. Taking all these venereal contagions together they amounted to 1·58 per cent. of the population in 1879. At that date, and up till the year 1888, the Parisian system of the obligatory examination of prostitution was in force, as I heard long ago from Professor W. Boeck when he visited London. Owing to discussion in this and various other European countries the French system was given up in 1888, but since then the notification of all cases of venereal diseases has been kept up. In 1887, the last year of the French *régime*, there were in Christiania, in a population of 136,000, 930 notified cases of gonorrhœa, 343 of soft sore, 222 of syphilis, and 44 of hereditary syphilis. The proportion of all venereal cases per 100 of the population was 1·14, and in 1886 it was 1·39 per cent. of the population.

After the abolition of the regulation in 1888 the percentage of venereal disease notified fell considerably for some years. In 1890 it was 0·90; in 1891, 0·81; in 1892, 0·99; in 1893, 1·05. After this it began again to rise. In 1897, 2204 cases of gonorrhœa, 493 of soft sore, and 683 cases of syphilis, with 50 cases of inherited syphilis, were notified in Christiania, in a population of 207,000—i.e., 1·65 per cent. of the population was attacked by venereal contagion. Dr. Beutzen, in a communication to the Brussels Congress of September last (tome 1r, appendice, p. 67), says: "Up to the year 1888 the control of prostitution was enforced in all large towns in Norway and regular examinations were enforced. When in 1888 this law was suppressed (except in Bergen and Trondhjem) I in common with most physicians entertained a fear that venereal disease would increase greatly in amount. I had formerly been employed as visiting physician and, in my then opinion, that was the only means of combating venereal diseases. I was, therefore, the more surprised to find that, after all, in Christiania these diseases went on after the suppression almost as they had done before the abolition. Having been one or two years after this nominated as Director of Civil Medical Services in Norway, I had to travel over all the country, and, as a general rule, I observed that the suppression of the old system had had no appreciable consequences. ..... In our country people are coming more and more to require that any measures taken against venereal diseases shall be based as far as possible on the equal treatment of both sexes, with the greatest respect for individual liberty and a minimum of arbitrary administration."

It seems to me, Sirs, that as all disseminators of preventable contagions ought to be prosecuted we might adopt with advantage the notification of cases of gonorrhœa, soft sore, and syphilis, as is done in Norway, no name being given. Practitioners might hand to venereal patients rules for the prevention of contagion of relatives and other persons, accompanied with warnings as to their responsibility if they should carelessly or maliciously infect any other unfortunate victim. All contracted persons, such as married people, should, if they claim it, obtain divorce from partners who damage their health in such a way. And generally speaking the law might, according to the spirit of our laws, inflict a penalty—fine or imprisonment—on any person who, carelessly or knowingly, infected another person with such a dangerous foe to life, if the victim lodged a valid complaint. Such, according to M. Jules Lejeune, President of the Brussels Congress and Minister of State, is as far as the State has a right to interfere in this hygienic question.

I am, Sirs, yours faithfully,

CHARLES R. DRYSDALE,
Consulting Physician to the Metropolitan Hospital, London.

Feb. 15th, 1900.

"THE CONFERENCE AT NEWCASTLE AND THE MIDWIFERY QUESTION."

To the Editors of THE LANCET.

SIRS,—If I have somewhat laboured the question of responsibility it is because it is an important element in any scheme for midwifery nursing. It dominates Mr. Haydn Brown's scheme as sketched in his letter to THE LANCET of Jan. 20th, p. 197, it is as a matter of practice essential to proper care and efficiency in work, and I am confident that medical men would for the most part be largely influenced in their estimate of any scheme by this very question; they certainly would wish to regulate their fees accordingly. Your correspondent, Mr. Haydn Brown, again, in his letter in your issue of Feb. 10th, p. 420, refers to the relations between principal and assistant, and says that the obstetric nurse could be dismissed by the medical man for malpraxis. This is hardly the point. A medical man does not wait until his assistant makes some culpable and gross mistake before dismissing him; he dismisses him if he finds that his work is not good, if it is of such a character as to keep him, the principal, in a constant state of anxiety for fear he should make some mistake. Now I take it that it would not be possible for the obstetric practitioner to dismiss the nurse under such circumstances. The question of fees is certainly a very important one, and as Mr. Hadyn Brown devotes two out of eight clauses to it I imagined that he also considered it important. Whether or not the fees are to be included in a bill does not affect their sufficiency. As to Clause 4, a casual visit by the practitioner is said to be "simply confirmative and disciplinary, to satisfy everybody. ....." I seriously doubt what such a visit would confirm; it might satisfy the nurse, but it certainly would not satisfy every medical man.

I did not suppose or suggest that all patients would be compelled to call in the obstetric practitioner, but according to the suggested scheme all who employed the obstetric nurse would have to be visited by him once at any rate and this whether they were or not his patients at another time. This to my mind is what would be so very likely to cause unpleasant complications between neighbouring practitioners. I did not refer to consultations between medical men, though I doubt whether in that class of patient "consultants of standing" would be called in as often as the neighbouring practitioner. That "women ..... need not engage the combination" is only half a truth, for if they engage the nurse they must be afterwards visited by the practitioner, and, if complications arise, be attended by him; so that if the nurse were popular and the practitioner not, what at unfortunate position would be created between the patient, and the obstetric surgeon, the patient and her usual medical attendant, and between the two practitioners. Mr. Haydn Brown has commenced his letter by formulating a most flattering and comforting doctrine, but I would remind him that silence is applicable to other things than consent and praise.

I am, Sirs, yours faithfully,

CHARLES FLEMMING.

Freshford, Feb. 13th, 1900.

"MYOIDEMA IN PULMONARY TUBERCULOSIS."

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Jan. 27th, p. 230, Dr. Walsham is, I think, inclined to underestimate the value of myoidema in phthisis. In every case where the disease is at all active, as shown by the temperature chart, I have never failed to obtain myoidema. Sometimes, if there has been no loss of flesh, the small lump can be more easily felt than seen. One condition is, as far as I know, peculiar to phthisis—that is, the presence of myoidema on one side of the chest only; this happens when there is active disease at one apex only and that slight. In cases where there is doubt whether an apex is affected or not the presence of myoidema on that side alone is absolutely conclusive of phthisis, though the presence of myoidema on both sides is not as conclusive. In the more advanced cases there is often a difference on the two sides as to the readiness of myoidema to appear, the more ready contraction being produced on the more diseased side. In acute cases it can often be got in every muscle in the body.

A very fair estimate of the rate of progress of the disease at the time is given by this phenomenon; the more readily it is produced the more acute the case, and if it cannot be obtained the phthisis is quiescent.

I am, Sirs, yours faithfully,

WALTER BROADBENT, M.D. Cantab., M.R.C.P. Lond.

Brighton, February, 1900.

"DEATHS UNDER CHLOROFORM."

To the Editors of THE LANCET.

SIRS,—Mr. Whiteford quotes one sentence from my last paragraph but he ignores the sequent and governing sentence, which runs: "But I confess, now I have got used to the Krohne inhaler and realise the significance of these deaths, that I should think it a crime to go back to a towel or a Skinner's mask." Yet this very sentence, which Mr. Whiteford passes over, has since been reprinted and made the text of an approving editorial notice by one of THE LANCET'S medical contemporaries.

Prior to this present decade no inhaler gave us greater security or convenience than the towel or the Skinner's mask. While that was so we older men were quite scientific in sticking to the open method. But that is so no longer.

Watching its effect on the pulse, respiration, and pupils is not "a method of estimating accurately the amount of chloroform absorbed." Such watchings give only a rule-of-thumb measure of the progression of the anæsthesia.

Mr. Whiteford now narrows down the "we" in his question so as to include only himself and me. This to shunt my reply. But Mr. Whiteford has forgotten that he published his question in THE LANCET of July 1st, 1899, long before I had turned up to assist him in the discussion. Is Mr. Whiteford a prophet?

I am, Sirs, yours faithfully,

Manchester-square, W., Feb. 19th, 1900. JAMES EDMUNDS.

THE DISCUSSION AT THE ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

To the Editors of THE LANCET.

SIRS,—It is of small moment to myself, but the distinguished Royal Academician Mr. Seymour Lucas may be surprised to learn that your reporter gave him credit for re-opening the adjourned discussion on Mr. Ballance's interesting paper instead of

Your humble servant,

Feb. 20th, 1900. R. CLEMENT LUCAS.

PUBLIC PRESCRIBING.

To the Editors of THE LANCET.

SIRS,—We are all anxious for war news and most of us no doubt invest daily in an evening paper, but that is no reason why we should tamely submit to be insulted as a profession by the proprietors of some of these journals. When I open my paper and find one whole column devoted to the specious advertisement of an anti-gout remedy and another to the puffing of a tonic with a portrait of the "last cure" my bile rises and I am in want of one of the various liver-pills more modestly advertised in the same paper. Cannot we as a profession boycott the papers which lend themselves to this offensive practice of public prescribing?

I am, Sirs, yours faithfully,

Feb. 20th, 1900. F.R.C.S.

THE Biennial Dinner of the Metropolitan Branch of the British Dental Association will be held on Saturday, March 3rd, at 7.15 for 7.30 P.M., at the Hotel Cecil, in the Richelieu and Medicis Rooms. Dr. Ashley Barrett, L.D.S., will be in the chair.

BATH EYE INFIRMARY.—The annual meeting of this institution was held on Feb. 16th under the presidency of Alderman Bartrum. The medical report stated that 268 in-patients and 1749 out-patients had been treated. The financial statement showed that there remained a favourable balance of £31. On the motion of the Rev. B. N. Thompson it was decided that an honorarium be awarded to Mr. W. Beaumont, the honorary surgeon to the infirmary.

THE ORGANISATION OF THE PROFESSION.

GREAT YARMOUTH.—THE FRIENDLY SOCIETIES DECREE A MEDICAL LOCK-OUT.

(FROM OUR SPECIAL COMMISSIONER.)

THE medical practitioners of Great Yarmouth have successfully formed a strong union. For many years they had suffered at the hands of medical aid companies and friendly societies, but they are now energetically coping with the evil. According to the last census, Yarmouth has a population of 49,334 inhabitants, but this, of course, does not include the immense number of visitors and holiday folk who throng to this town during the sea-bathing season. The medical profession is, however, more concerned with the resident population, who belong for the most part to the seafaring, working, and tradesman classes. There is not a large upper middle-class and wealthy residential population; still, there are the dealers in the export fish business and the import timber trade who possess some wealth. Then the season is very heavy while it lasts, so that hotel and lodging-house keepers must make some considerable profits. Of late, also, a few very good high schools have been established at Yarmouth and they have increased the residential population, as the parents of children sometimes come and live near these educational institutions. Nevertheless, even when all this is taken fully into account, it is on comparatively poor patients that the medical practitioners must rely for the greater part of their income. It is therefore very necessary that those who can afford to pay small fees should not be able to avoid doing so by joining semi-charitable institutions. There are in Yarmouth many persons who appear to be poor when they are not so. By letting lodgings in the summer months and by successful fishing expeditions considerable sums are sometimes earned. Very often these people do not live up to their income and the balance is put in a bank or devoted to the gradual purchase of a house; others, on the contrary, squander this surplus in drink. In either case it may justly be urged that those persons who in the course of a year can earn not only enough to maintain their homes but are also able to spend in dissipation or to bank considerable sums should pay proper fees to their medical attendants. In practice, however, this is not done. Because these people are content with a low standard of living they imagine that they have a right to avail themselves of provident organisations which were originally established only for the benefit of the poor. Nevertheless, even this was to some extent tolerable so long as it applied only to the bread-winner, the head of the family. By attending the members of a benefit society for 1*d*. per week the practitioner obtained fees at the usual rate when members of his family were taken ill, and thus this contract work helped to build up a private practice. Of late, however, female lodges were founded and both women and children were brought in, so that the indirect advantage of contract work was seriously menaced.

There was no organisation capable of dealing with this grievance. Certainly Yarmouth possessed a Medico-Social Club, but it did not include all the practitioners of the district. The members met at each other's houses, read scientific papers, and then terminated the proceedings by having supper together. During the course of these social gatherings a pamphlet was circulated among the members, entitled "An Open Letter to the Profession," which urged practitioners to unite and to fight against various evils, notably against the contract system. Mr. W. E. Wyllys spoke on the questions raised by this pamphlet, and finally it was resolved to get up a meeting of the local profession to discuss the subject. This meeting was held in March, 1896, in the mayor's parlour of the town-hall. 19 practitioners attended, including some who had come from the neighbouring district of Gorleston. At Yarmouth, as in many other places, there existed a primary difficulty: who was to take the initiative in the movement? This is a delicate matter, for it does not often happen that a practitioner holds so prominent a position that he can without question or cavil take the lead. The Yarmouth practitioners avoided this difficulty by transferring the responsibility to an outside body. They resolved to form

themselves into a branch of the Incorporated Medical Practitioners' Association. Then they applied to the central and governing body of this association, sent up their subscriptions, and received official sanction to form a branch. By thus making use of this central body they readily persuaded all the local practitioners to meet and no one was accused of taking too much on himself or of attempting to thrust himself forward. At their second gathering, which was also held in March, 1896, the medical practitioners of Yarmouth met as a branch of the Incorporated Medical Practitioners' Association and proceeded to appoint their officers—namely, a committee of five, a president, and Mr. W. E. Wyllys (25, King-street) as secretary and treasurer, a post which he retains to this day. They called themselves the Great Yarmouth District Committee of the Incorporated Medical Practitioners' Association.

Even at this early date they began to discuss the question of female Foresters. This debate was forced upon the association, perhaps somewhat prematurely, inasmuch as one of the members had resigned his position as medical officer to a female lodge of Foresters because several women who possessed good incomes had been admitted as members. The female Foresters had already applied to other practitioners to accept the vacated position, but the latter very loyally replied that they would wait till after the meeting before giving an answer. The meeting after some discussion decided that the medical officer in question had better withdraw his resignation for a period of three months so as to give the newly formed medical union the time to negotiate. From the very first the profession had displayed great unanimity, and therefore there was some hope that such negotiations might prove successful. At the first meeting 19 names were given in, but this included three practitioners from Gorleston, and as it was subsequently found that the two districts could not be worked together the Gorleston practitioners ultimately withdrew. There remained 16 Yarmouth practitioners, who, with few exceptions, included all the members of the profession in active practice. There are other medical men at Yarmouth, but for this reason or that they certainly would not take up contract work and are no longer dependent on medical practice. It may be thought that this is a very small number of medical men for so large a town, but this can be explained by the very peculiar topographical situation of Yarmouth. There are no suburbs; on the one side there is the sea and on the other side the marshes. Yarmouth is situated on a narrow tongue of land that runs from north to south. To reach any of the inland residences beyond the marshes it is necessary to go a long way round and this means a journey of some 20 miles. A town practice generally includes a certain number of country residences which, though at some distance, are accessible by a direct route, but this is not the case at Yarmouth.

The members of the District Committee met every month and one of their first acts was to draw up a letter which was addressed to all the benefit societies urging that a joint conference should be held so as to discuss the existing grievances. The terms on which the medical practitioners were willing to take up contract work were also fixed and these were printed and sent round to all the clubs. In reply, the benefit societies adopted a lofty tone and the majority refused to entertain the proposals made by the medical practitioners. Two benefit societies did, however, accept the new rules and conceded to their medical officer the right to refuse those members whom he thought were too well off to belong to such societies. They also agreed to an increase in the amount to be paid as subscriptions. The other benefit societies adopted a course which was singularly devoid of tact and showed that they in no wise appreciated the situation. They held a large meeting at which the following resolution was adopted:—

> This representative meeting requests the doctors to withdraw their circular and retain their position on the old terms and take females on the same terms as the males.

The medical men were further called upon not to raise the question in future. In a word, there was to be no improvement, and the medical officers were to pledge themselves never in future to seek to obtain any such ameliorations. This resolution was passed in October, 1896, and the medical officers at once replied that they adhered to their former demands; at the same time they decided that they would not resign but that they would wait to be dismissed. The benefit societies had put themselves in an awkward position, for they had called upon their medical officers to pledge themselves not to raise these questions in the future. Of course, they all very naturally refused thus to pledge themselves, and this demand being rejected the benefit societies thought themselves bound to dismiss their medical officers. Thus the onus of dismissal fell upon the benefit societies; it was not a strike but a lock-out.

At the time when matters had come to a head the Yarmouth practitioners addressed a memorial to all the medical licensing bodies of the United Kingdom calling attention to the evils and abuses of the clubs and medical aid societies, and expressing the desire that these licensing bodies should give their opinion on the conduct of those of their graduates and holders of diplomas who by accepting appointments in such institutions aided and abetted in the perpetration of the abuses in question. This memorial set forth that well-to-do persons were admitted to institutions which were meant primarily for the relief of the poorer classes; that women and children were admitted at rates of payment that were absolutely inadequate; and that industrial assurance companies had organised a system of indiscriminate canvassing whereby the private patients of other medical men were solicited directly for the company and indirectly for its medical officers. These lay organisations conducted medical practice purely as a commercial speculation, in some cases paying their medical officer a fixed salary and appropriating for themselves whatever medical fees were received over and above this sum. At Yarmouth these societies had refused to come to an understanding with their medical officers and had dismissed them. They then advertised in the lay press for other medical men to take up this work, the medical journals having refused to insert such advertisements. Though fairly warned that such conduct was condemned by the general voice of the profession, some medical men had accepted these appointments thus "knowingly, wilfully, and openly assuming the position of assisting a certain section of the public to defeat the local medical men in a matter involving the vital interests of the profession." The memorial to the licensing bodies then went on to relate that:—

> One of our members had previously acted as the medical officer of an industrial assurance company offering medical aid as an attraction to its insurers, paying its medical officer a fixed salary and canvassing for patients from door to door. This office he has resigned, but in the absence of any declaration as to these appointments by the General Medical Council or by the universities and colleges granting medical qualifications the company has, we believe, easily found a substitute. Such facts as we have recited can be quite paralleled in the experience of other towns and districts of the United Kingdom and appear to us to call for the careful attention of the various governing bodies entrusted with the granting of medical qualifications and with the control of those qualified.

The memorialists concluded by inquiring whether the holding of such positions was compatible with the degree or diploma granted, and if it did not contravene existing regulations, would it not be possible to enact a new by-law forbidding such practice? And was it not desirable that the General Medical Council should declare such conduct to be infamous from a professional point of view? This memorial was signed by 15 of the Yarmouth practitioners; and it is worth noting that though it often happens that Irish medical men are the offenders in regard to such club practice, the most sympathetic and encouraging replies were received from the Irish licensing bodies.

Great Yarmouth.

(To be continued.)

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Health of the City.

THE report of the medical officer of health, Dr. A. Hill, for 1899 has been issued by the Health Committee. It contains much useful and valuable information. The birth-rate for the year was 34·3, a higher figure than in any year since 1885. The death-rate was 20·5 per 1000; this is an increase over the average and is due to mortality from diarrhœa and enteritis during the hot months. The zymotic death-rate was small, being 2·9 per 1000. No case of small-pox has occurred for three years past. Typhoid fever shows an increase owing to a severe outbreak in the autumn, the number of deaths being 119, or 20 more than the average. Dr. Hill expresses his strong conviction with regard to the infectiousness of this disease—that direct contact with the person or

belongings of a typhoid fever patient is one of the greatest factors in the spread of the disease. Some interesting details are given in reference to the diagnosis and treatment of diphtheria. Under the arrangement made with Mason University College 269 specimens from the throats of persons who had some symptoms of diphtheria were examined. In 123 instances the characteristic bacillus of diphtheria was found. Antitoxin was supplied to 108 cases where the bacillus was found and to 10 cases in which it could not be discovered; also in 94 cases where no examination was desired. The report says that in addition to defraying the cost of primary examinations the committee here also decided to pay the cost of examinations at the College which medical men may desire to have made before certifying the complete recovery and freedom of patients from the disease. The women health visitors appointed last April have done useful work; they visited about 11,700 houses and paid about 3000 revisits. Altogether evidence is given of the activity and value of the Health Committee's labours.

Birmingham and the Medical Arrangements for the War.

Mr. J. F. Hall-Edwards, surgical radiographer to the General Hospital, has been appointed x ray expert and surgical photographer to the Hospital of the Imperial Yeomanry at Cape Town. Messrs. Parker and Sons, electrical engineers, of Wolverhampton, have made a gift of a dynamo for electrically lighting the operating theatre of the Imperial Yeomanry Hospital. It will serve also to furnish the current for the x ray work. Mr. Hall-Edwards is to take this with him as well as photographic apparatus of all kinds voluntarily supplied by the public for his use. The city has also supplied ten members from the St. John Ambulance Brigade, whose appearance elicited pleasing comments from the commissioner. On Feb. 12th an urgent telegram for ten more men was received. In spite of the short notice more than the original number had volunteered by the next morning from the ranks of the police and civilian members of the local branch, promptitude which speaks well for the organisation.

The Workhouse Infirmary.

The Workhouse Infirmary of Birmingham holds a high reputation among similar institutions, being said to be one of the finest and best equipped in the country. On Feb. 2nd the Lord Mayor (Alderman Beale) and the Lady Mayoress paid a lengthened visit to the wards, thoroughly examining the whole building. The Lord Mayor expressed himself as having for the first time realised the importance of the duties discharged by the guardians. As to the infirmary, he stated that the excellent arrangements and management entirely justify the high reputation in which the infirmary is held.

Feb. 20th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Manchester Royal Infirmary.

AT the annual meeting of the trustees of the Manchester Royal Infirmary which was held a few days ago the chairman, Mr. Edward Heywood, moved the adoption of the report and mentioned the negotiations which had taken place with the corporation respecting the sale of the infirmary site. The infirmary board named the sum of £400,000 for submission to the trustees, but as the city council decided not to offer that sum the negotiations came to an end. He also moved:

That the trustees hereby authorise the board of management to appoint a committee to deal with the last resolution of the medical board as given in the annual report with a view to ascertain (1) whether or not a hospital suitable in every way can be built on a plan other than the pavilion; and (2) if this be decided in the affirmative by such committee, that the board of management be authorised to take steps to obtain suitable plans and estimates and to incur all necessary expenses in connexion therewith.

He believed that the best thing for Manchester would be to have a great central hospital on the site where the infirmary has stood for nearly 150 years. Dr. T. Harris seconded the resolution and said that the advance of science rendered it doubtful whether a pavilion hospital at the present time was an absolute necessity. Dr. D. J. Leech said that the first part of the resolution commended itself to all the trustees, but he felt some doubt about the second part. The pavilion type of hospital had been considered necessary for 20 or 30 years and was still held to be the best. Mr. G. A. Wright supported the resolution, which was carried almost unanimously. It would be useless to speculate as to the future. Should the corporation take heart and offer a sum sufficient to make it worth while for the infirmary to sell the whole site it would provide for the building of a large and fully-equipped hospital on another site and secure a worthy position for the Art Gallery and Free Library, which is one of the needs of Manchester. It is also by no means certain that the present site of the infirmary is sufficiently large for the great hospital with its administrative buildings which is deemed necessary for Manchester, even if some type inferior for hospital purposes to the most approved be chosen.

Manchester and Salford Sanitary Association.

The annual meeting of the Manchester and Salford Sanitary Association was held last week, Mr. T. C. Horsfall, in the absence of Dr. Leech, being in the chair. The chairman regretted the lack of interest shown by the people of Manchester in the association, which was indicated by the small amount of the subscriptions (£164 14*s.*) received during the past year. He mentioned one instance showing the pressing need for improved physical education. Out of 11,000 young men who had presented themselves as recruits from Manchester only 3000 could be accepted, and of the latter only 1000 were found fit to serve in line regiments. Against a great town like Manchester, he thought, "no more disgraceful fact had been recorded in human history." If the like holds good of the other great towns of our country the prospect of our being fit to meet possible imternational difficulties is but poor. Without touching on politics, the situation must be spoken of as perilous, and it is the duty of all, and especially of those who have the control of our educational schemes, to see to it that our boys have a fair chance of possessing sound and healthy bodies, and minds filled with something more practically useful than the mere mass of ill-digested book lore which seems to be too often the outcome of our present-day methods.

Hospital Sunday.

The dreadful weather of Sunday, Feb. 11th, had the effect of so reducing the Machester congregations that the Hospital Sunday collections were grievously lessened. Indeed, in some cases the congregations were so poor that it was decided to postpone the appeal for the hospitals. That at the morning service at the Cathedral numbered, exclusively of clergy, choir, and the boys of the Cheetham Hospital, which is close by, only 40 persons, although it is usually crowded. "The committee of the Hospital Sunday and Saturday Fund appeal to all to support in their various places of worship any arrangement that may be adopted for furthering the interests of the medical charities of Manchester by generous contributions." The sum collected has of late rather fallen off, and this year with the pressing claims of those who are dependent upon our soldiers many charities will suffer. It is said, however, that just now Manchester is exceptionally prosperous and will therefore still be able to give freely. Many have long felt that a more genial time of the year should be chosen for this annual effort. The heavy snowstorm of Feb. 11th is a strong argument in favour of a change of date which should surely be made. If this is agreed upon the collection should be fixed for a day either before or after the summer holiday season, or the results will be disappointing. Obviously it would be best to have the collections before the holiday season has begun.

Feb. 20th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Annual Report of the Liverpool Royal Infirmary.

THE report of the Liverpool Royal Infirmary states that the number of in-patients during the year 1899 was 3012, with an average residence of 27·95 days. There had been 23,605 attendances of out-patients, and 58,883 re-dressings, so that altogether they had dealt with 82,488 cases during the year. The receipts were £13,452, and the expenditure was £14,129, leaving a deficit of £1269.

The increased prosperity of the country had not benefited the institution in the matter of extra donations. The contribution from the Hospital Saturday and Sunday Fund was £2783, or an addition of £130 for the year. The question of rating had been a source of trouble to the committee. While formerly they paid no rates, since 1899 they had paid poor-rates on £510 assessment, which was, however, a liberal reduction of their assessment. Representatives of 39 charities in Liverpool had asked the finance committee of the city council to relieve them from the city rate, but without a satisfactory result, owing to the present state of the law. The consequence was that the Royal Infirmary had to pay poor and city rates amounting to 6*s.* 8½*d.* on the assessment or a sum of £163 per annum. The town of Derby had obtained a local Act relieving medical and other charities from the payment of rates, and it was hoped that it might be possible for the Liverpool Corporation to introduce a clause in their omnibus Bill freeing Liverpool charities from the payments of rates, which were considered to be a great hardship upon all charitable institutions. Mr. Charles Langton was elected president for the ensuing year, and Mr. Edward Hewley was elected chairman of the committee.

The Liverpool Royal Southern Hospital.

At the annual meeting of the Liverpool Royal Southern Hospital, held on Feb. 12th, the treasurer announced that, owing to extensive improvements effected during the year, the hospital was in debt to the extent of £4000. The Lord Mayor said that about £50,000 would place all the Liverpool charities in a condition of comfort, and he thought that it was a pity that Liverpool merchants, some of whom, he had heard, had made from £50,000 to £200,000 out of the war, did not give more to these charities.

The Municipal Bacteriologist.

Professor R. W. Boyce of University College has been appointed municipal bacteriologist, at a salary of £600 a year.

The Stanley Hospital.

The new out-patient wing which has been added to the Stanley Hospital at a cost of £2000 by the trustees of the Roger-Lyon Jones Trust, will be formally opened on Feb. 22nd by the Lord Mayor. The wing is placed at the rear of the institution, and is connected with the main building by a covered way. It contains a large and well-ventilated waiting-room, heated by hot-air pipes, and is capable of accommodating 200 patients. There are also a porter's lodge, consulting rooms for the physicians and surgeons, a dispensary, and other necessary accompaniments. The hospital will provide 20 beds for the disabled soldiers arriving from the seat of war.

The Liverpool Medical Institution and the Prevention of Tuberculosis: Presentation to the Sub-Librarian.

The following resolution was carried unanimously at the recent meeting of the society on the proposition of Dr. Nathan Raw:—

That it is desirable that a local branch should be established in Liverpool in connexion with the National Association for the Prevention of Consumption and other Forms of Tuberculosis.

A sub-committee of the institution was appointed to carry out this object.—Mr. William Jones, the resident librarian of the Medical Institution, at the same meeting was presented with a cheque for £193 12*s.* 9*d.*, subscribed by the members in appreciation of his valuable services during a period of 21 years. Mr. Jones acknowledged the gift in a humorous and happy reply.

The Proposed Parochial Hospital for the Treatment of Tuberculosis.

At a meeting of the select vestry held on Feb. 6th, a letter was read from the Local Government Board enclosing the draft of an Order which the Board had caused to be prepared for combining the unions of West Derby, Liverpool, and Toxteth, for the purpose of providing a joint hospital for paupers suffering from tuberculosis. The document consisted of 86 sections which, several members of the vestry pointed out, a lawyer would have to decipher. The consideration of the communication from the Local Government Board was adjourned for a fortnight to enable the vestry clerk to prepare for the members an abstract of the document setting forth its meaning. The matter will be fully discussed at the next meeting of the select vestry.

Extension of a Corporation Infectious Hospital.

Plans were submitted to the health committee for the enlargement of the administrative block, the erection of a porter's lodge, and a patients' discharge block at the Corporation Infectious Hospital, Linacre, at an estimated cost of £2050. The necessity for an immediate provision of additional sleeping accommodation for the nursing staff was found to be pressing. During the past few years there had been an overcrowding of the staff through lack of sufficient room, giving rise to much inconvenience. The out-districts supplying patients to the hospital—viz., Waterloo, Seaforth, Sutherland, and Great Crosby—would be called upon to contribute to the expense incurred. The plans were approved and tenders for carrying the work into execution were issued.

The Outbreak of Ophthalmia at the Liverpool Workhouse.

Dr. W. Alexander, surgeon to the workhouse hospital, has reported the prevalence of ophthalmia amongst children under the care of the select vestry. He instanced the satisfactory results obtained from isolation and treatment of the children at Olive Mount and Maghull. Successful treatment was impossible in the workhouse itself, and he urged the retention of the children at those two institutions. The ignorance of parents had had a great deal to do with the spread of the disease. Parents should be encouraged to leave their children in the workhouse until a cure was effected. If treatment could not be conducted in the future at Olive Mount or Maghull, he suggested the establishment of an ophthalmic school for 40 children—20 boys and 20 girls—at some suitable place. The terrible scourge could only be stamped out by isolation and rigorous treatment. A bacteriological and pathological report of the ophthalmic cases had been obtained by Dr. Alexander from the Thompson-Yates Laboratories. This was described by Mr. William Rathbone as an extremely valuable document which should be printed and circulated amongst the members of the select vestry, and copies, he said, should be sent to other boards of guardians.

University College, Liverpool, and the Royal Army Medical Corps.

The Secretary of State for War has offered the authorities of University College a nomination for a commission in the Royal Army Medical Corps for a student of the College. Candidates must be duly qualified and physically fit. After undergoing the usual physical examination and being approved by the Director-General of the Army Medical Department the nominated candidate will be required to report himself at Netley on March 1st to undergo the necessary course of instruction.

Feb. 20th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Suicide in Scotland.

AT a meeting of the Royal Society of Edinburgh on Feb. 19th Sir John Sibbald delivered an address on the Statistics of Suicide in Scotland. He said that the information to be found on that subject in the Reports of the Registrar-General had not been, as in other European countries, digested and tabulated. He then presented a series of statistical statements which he had prepared and in which he had collected and arranged this information. The tables showed (1) the influence of age and sex on suicide; (2) the comparative frequency with which different methods were employed; (3) the influence of the time of year on the number of suicides; (4) the influences of town life and country life respectively; and (5) how far they were justified by a study of these statistics in accepting the assertion that in Scotland, as in other countries, suicide was on the increase. The statistics for Scotland showed the same preponderance in the number of suicides in summer over those occurring in winter as had been shown by the statistics of every country in which the matter had been investigated. The suicide-rate gradually rose from the months of November, December, and January to the months of May, June, and July, after which it gradually fell. This he considered to be one of the most remarkable facts in vital statistics, the proportional progress from month to month being almost identical for all countries north of the equator.

As regards the question of town and country life the statistics of Scotland did not support the statement that suicide was more frequent in towns. The suicide-rate in the mainland rural districts was somewhat higher than the rate in the large towns. The counties along the east coast of Scotland had higher rates than those along the west coast from the Mull of Galloway to Cape Wrath. The average rate for the whole of Scotland during the 18 years from 1877 to 1894 was 55 per 1,000,000 of population. The lowest rates were for the Highland counties lying north-west of a line drawn from the Moray Firth to the Firth of Clyde. The highest rates were shown by Kincardine, Forfar, Mid-Lothian, Linlithgow, and Haddington, all of which had rates over 71. These facts were illustrated by means of a coloured map. The Registrar-General's returns for successive years showed a great increase in the number of suicides. In spite of this, however, Sir John Sibbald did not believe that they were justified in accepting the increase as a fact. It had to be borne in mind that of late years public opinion with regard to suicide had altered considerably. It was now so universally recognised that in the greater proportion of cases suicide was the outcome of mental disease, that the idea of disgrace was not so closely connected with the act, and efforts to conceal its occurrence had consequently decreased. Another point which had also to be taken into account was the greater efficiency during recent years of the administrative machinery for registration. After considering the rates for the different methods of suicide Sir John Sibbald concluded by saying that it seemed clear that the alleged increase of insanity must be regarded as not proven.—Dr. Clouston congratulated Sir John Sibbald on the valuable addition he had made to vital statistics. In the course of a few remarks he said that as regarded the medical aspect of the subject, between two-thirds and three-fourths of all cases of melancholia either felt suicidal or attempted suicide, but that there was also no doubt that excess of alcohol produced a condition of brain which frequently led to suicide, and that if there was an increase of suicide it was not due to the intensity and difficulty of living but to the excessive use of alcohol in our cities. He believed that the fact that suicides were more frequent at certain seasons was due to a reversion to the old sexual conditions of the ancient ancestors of the human race. As regarded the distribution of suicides there was no question that the Celt with his vivid imagination, though often melancholic, feared death more than the Teuton did.

The Dietary and Food-Supply of the Poor in Edinburgh.

At a meeting of the Edinburgh Town Council on Feb. 13th a letter was read from Dr. Noel Paton, superintendent of the Research Laboratory of the Royal College of Physicians of Edinburgh, asking the interest of the Town Council in a study upon which he was engaged of the dietary and food-supply of the poorest classes. The object of the study was to obtain data which should serve as guides in directing the poor how to obtain satisfactory food-supply at the lowest cost. He further asked the Town Council for a sum of £50 in order to enable a preliminary study to be made. Enclosed with the letter was a statement describing the method of procedure in this study. It is being carried out in the Research Laboratory of the College of Physicians with the coöperation of Dr. J. C. Dunlop in the scientific part of the work and of Dr. S. Inglis and a staff of voluntary workers in the collection of materials and information. The letter was sent to the Public Health Committee of the Town Council for report.

Feb. 20th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Royal Victoria Eye and Ear Hospital, Dublin.

AT the annual meeting of the supporters of the Royal Victoria Eye and Ear Hospital, Dublin, held at the Mansion House on Feb. 13th, the honorary secretary (Mr. Henry R. Swanzy) was enabled to make the important announcement that the council had succeeded in purchasing a desirable site in Adelaide-road for the long-contemplated new buildings. The plot is situated on high ground and has never yet been built upon. It is large enough to accommodate a corridor hospital with 120 beds, besides apartments for the staff of nurses and a separate building for the treatment of extern patients.

Death of Samuel George Wilmot, M.D. Aberd., F.R.C.S. Irel.

Mr. Samuel George Wilmot, Ex-President of the Royal College of Surgeons in Ireland, died at his residence, 4, Vesey-place, Kingstown, on Feb. 17th. A circular has been issued by the President requesting the Council and Fellows of the College to attend his funeral which will leave the Royal College of Surgeons on the morning of Feb. 21st for the cemetery at Mount Jerome. Mr. Wilmot, who had retired from the practice of his profession for some years, was formerly well known and highly esteemed in Dublin. He was for a long period surgeon to Steevens' Hospital and consulting surgeon to the Coombe Lying-in Hospital.

The Ulster Medical Society.

On Feb. 16th Alderman James Graham, M.D. (chairman of the Public Health Committee of the City of Belfast), in his official capacity as President of the Ulster Medical Society, entertained the members of the medical profession and his municipal colleagues in the Exhibition Hall, Belfast, which was comfortably warmed and beautifully furnished and decorated for the occasion. The entertainment took the form of a smoking concert. Mr. Boyle's string band was present and a most enjoyable concert was provided, while, in addition to the music, Dr. J. S. Morrow and Dr. A. Fullerton gave recitations. An interesting kinematograph exhibition was also shown. Supper was served in the ante-room. The evening was a most enjoyable one and the entertainment was characterised by that cordial hospitality for which Dr. Graham is proverbial. Such occasions do much to cement that feeling of brotherhood which is so important to the medical profession.

Extra Professional Assistance in Dispensary Cases.

The Local Government Board have written to the Limavady guardians stating that in their opinion, both in the interests of the ratepayers as well as of the sick poor, reasonable remuneration should be fixed for extra medical assistance, and urging them to adopt a scale, as otherwise, in the case of legal proceedings, they might be obliged to pay very much larger fees than those suggested by the medical officers. At their meeting on Feb. 19th the Limavady guardians adopted a scale of one guinea with one shilling mileage on the outgoing journey for daytime, and a guinea and a half with similar mileage for night. It is hoped that the Local Government Board will decline to accept such a low rate of payment.

Londonderry County Infirmary.

Under the new Local Government Board the committee of management is to be constituted of 11 of the old governors (who were elected on Feb. 13th), a like number of the City of Derry Corporation, and four to be selected by the Derry County Council. The Local Government Board, by the advice of the adjuster of taxation, has assessed the city corporation at £1250 a year for the maintenance of the infirmary and the county at large at only £244, which the city authorities regard as inequitable. The county council are to be asked to summon a special meeting to elect their representatives, as until this is done the new board of the infirmary cannot be constituted.

Appointment to the Chair of Surgery at the Queen's College, Cork.

Dr. C. Yelverton Pearson, Professor of Materia Medica at the Queen's College, Cork, has been appointed to the chair of Surgery, rendered vacant by the death of the late Professor Stephen O'Sullivan. Professor Pearson is surgeon to the Cork North Infirmary and has had considerable experience as a clinical teacher. The chair of Materia Medica is now vacant and already several candidates are in the field.

The Nursing Question in the Belfast Royal Victoria Hospital.

For a considerable period there has been friction between the authorities of the Nurses' Home, Belfast, and the Royal Victoria Hospital in reference to the payment of nurses and the question has reached an acute stage owing to the fact that the committee of the Nurses' Home have intimated to the board of management of the hospital that their financial

position is so critical that they can no longer supply special nurses to the hospital except at the ordinary market rate of 25*s.* per week and board and lodging, and that they will put on no new probationers to replace those completing their time until some satisfactory arrangement has been concluded with the hospital. The whole question has been referred to the Finance Committee of the Royal Victoria Hospital and some of the medical staff, who are to meet a sub-committee of the Nurses' Home and try to arrange a *modus vivendi*.

Feb. 20th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Difficulties in making Post-mortem Examinations in Hospitals.

DR NAPIAS, the head of the Assistance Publique, has sent a most disturbing circular to the authorities of all the hospitals, one which, moreover, has called forth the most lively protestations from the heads of the various hospital departments. Under the pretence of sticking strictly to the letter of certain ancient enactments dated Dec. 3rd, 1834, and which formally forbid the practice of dissections in hospitals, the head of the Assistance Publique recalls the fact that the only object of a post-mortem examination should be simply to ascertain the cause of death. Any mutilation or removal of any organ—however interesting it may be from a pathological or other scientific point of view—is therefore forbidden on principle. In future, then, no pathologist must remove or preserve any organs or portions of organs without having made a special request to Dr. Napias stating in detail the reasons for his action and the scientific interest of the specimen. Dr. Napias has decided that henceforward this permission will only be very exceptionally granted. As a reason for this stringency he gives in the case of bodies which are claimed the necessity for safeguarding the rights of the relatives, and in the case of unclaimed bodies the necessity for handing over to students of anatomy subjects which are complete and possess all the viscera, whereas at present bodies are sent from the hospitals with the thorax, the abdomen, and the skull quite empty. As Dr. de Maurans says in a sensible article in the *Semaine Médicale*, this circular not only runs counter to the scientific interests of medicine, but also to those of the sick. Clinical medicine can nowadays make no serious progress unless it goes along with accurate anatomico-pathological research. It is to be hoped that this regulation, which creates for the medical profession of Paris a situation so harmful and at the same time places them in a position differing from that of the profession in every other country, will, like so many other official regulations in this country, remain a dead letter.

Rates for Gratuitous Medical Attendance.

Once more there is a great discussion over the application of the enactment of July 15th, 1893, which dealt with the question of gratuitous medical attendance for the poor. It made it compulsory upon every commune and department to allocate from their funds a sufficient sum to provide for their poor obtaining medical attendance, and, further, should the gravity of the case demand it, removal to the nearest hospital which was in future bound to take the case in. The State takes cognisance of the matter with regard to the amount of the rating, which of course varied with the rateable value of the district and the number of poor. Owing to the great latitude left to the local bodies (*conseils généraux*)[1] to vote the annual sums necessary the enactment has been applied very differently in different districts. To-day, seven years after the passing of the Act, there are some departments where it has never been put in force. True, in the great majority of places the system is well organised and in good working order; in others, as Lot-et-Garonne, Alpes Maritimes, Gard, the Landes, and Hautes Pyrénées, the organisation is rudimentary; in others still it is better, but only works with difficulty. The crux of the whole matter is deciding how much the medical man shall be paid. Generally, the sum depends upon the number of visits paid, a small sum being added for mileage. Although the fees are anything but high medical men are generally content because there is a fair relation between the amount of work and the pay. But a dispute has arisen in the department of Ille-et-Vilaine owing to the local authority claiming the right to pay the medical man a definite sum for every patient on the list, however many visits may be necessary. This sum is fixed at 1 franc per annum or 1 franc 50 cents if medicines are provided. If it be calculated that a third of the poor on the list will send for the medical officer during the year, and that these patients for the most part will be laid up for varying lengths of time necessitating a certain number of visits, it is obvious how absurd is the rate at which the local authority wishes to pay the medical man. The syndicate of medical men in Ille-et-Vilaine have refused to agree to these conditions, so the matter is still in debate, and the poor are without medical attendance until the Minister of the Interior shall decide the point at issue. What is remarkable is that all the neighbouring departments have adopted the system of payment by visit and have found it work most satisfactorily.

Feb. 20th.

[1] There is no institution in the British Islands which answers exactly to a conseil général, but perhaps a county council has to perform nearly the same functions.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Professor Koch on Malaria.

PROFESSOR KOCH'S report of his expedition to the Dutch Indies for the study of malaria has been published by the medical department of the Colonial Office in a recent number of the *Deutsche Medicinische Wochenschrift*. He commences by stating that malaria has decreased considerably not only in Batavia but also in the other towns of the colony, so that during five weeks only 30 cases of malaria in an active stage could be examined; the other cases under observation were either convalescents or suffering only from sequelæ of the disease. In the colonial army the number of patients had decreased 50 per cent. during the last 15 years, a fact partly due to hygienic improvements but especially to the systematic treatment of malaria by quinine. In Professor Koch's opinion the distribution of quinine to the population free of charge is a very judicious measure. During the last 10 years on an average 2000 kilogrammes (39 cwt.) of quinine were distributed every year and Professor Koch advised the governments of countries where malaria is prevalent to follow the example of the Dutch authorities. He then discussed the question whether malaria is communicable to animals or not. He injected blood of malaria patients into monkeys (orang-outangs and others) but no malaria was produced; he therefore concluded that malaria was confined to the human subject. From Batavia the commission proceeded to Ambarawa in the hope of finding there a more ample supply of material for research; but although Ambarawa is situated in a marshy region only a small number of recent cases of malaria were found. Professor Koch was of opinion that the general population having contracted the disease during the period of youth had become immune against it. To test this hypothesis he examined the blood of children and detected the parasite of malaria in about 9·2 per cent.; in another village the proportion was even 22·8 per cent. From Ambarawa the commissioners went to Tosari, having received the information that this was the only place in Java where malaria occurred apart from mosquitoes. They found there one malaria patient who, however, had caught the disease elsewhere; no parasites were to be seen in the blood of children. The researches conducted in Java have therefore confirmed the view that endemic malaria exists only in places where mosquitoes are to be found. Professor Koch believes that malaria is less malignant in Java than in Africa; in the former country the real tropical fever was present in only 47 per cent., whilst in East Africa 89 per cent. of the patients suffered from the malignant form. Professor Koch finally insists upon the necessity of examining the blood of children in places where the adult population is free from malaria, for it is only in this way that a reliable result can be obtained. The commission will proceed from the Dutch Indies to New Guinea.

Public Health in South Africa.

In the Berlin Society for Public Health Professor Kolle

read a paper on the Hygienic Conditions of South Africa from the Cape to the Zambesi River. He is particularly well informed on this question, having visited those countries, together with Professor Koch, for the purpose of studying rinderpest. He said that the climatic conditions of South Africa are not yet thoroughly investigated, the number of meteorological stations being relatively small. The public health service is well organised. There are public health officers whose duties include travelling over their respective districts and using the necessary means in the event of outbreaks of infectious disease. Bacteriological institutions, good hospitals, and leper asylums exist, and the notification of infectious diseases is strictly enforced. A large portion of South Africa is very healthy and would be very suitable for phthisical patients if trees were more plentiful. Water, however, is very scarce, so that the rain water has to be collected and stored in reservoirs, and better methods of filtration are required. Among endemic diseases enteric fever claims the first place. This disease is of a severer type in Africa than in Europe owing to a greater virulence of the bacilli. South African practitioners are of opinion that this aggravation of the symptoms is due to a combination with malaria. The British troops would probably suffer from enteric fever to a greater extent than the Boers would, the majority of the latter having had the disease in childhood and being therefore protected against it. Some of the British regiments have been inoculated with anti-typhoid serum and some have not, and Professor Kolle remarked that it will be of great interest to observe the differences, if any, in the attack and in the degree of malignancy in the two classes. Malaria is prevalent in many districts of South Africa, and certain species of mosquitoes are capable of conveying the germs of the disease. Finality has, however, not yet been reached in our knowledge of the relations between mosquitoes and malaria. The endemic dysentery of South Africa is comparatively mild. The grave form of dysentery affecting the British force was probably conveyed by troops coming from India. Scurvy also occurs in South Africa owing to the deficiency of fresh vegetables. Bubonic plague has never been prevalent there, in the author's opinion, because there are no rats. Small-pox is widely spread, but the medical authorities have now succeeded in preparing vaccine lymph in the country. Tuberculosis is very little known in South Africa, whereas, on the other hand, leprosy threatens to become in course of time a real danger for the population. In conclusion, Professor Kolle gave an account of the rinderpest and the immunisation of cattle performed by Professor Koch, by himself, and by Dr. Turner.

A University for Hamburg.

Rumours are current that the municipal authorities of Hamburg intend to establish a university. This large commercial city, one of the confederated states of the empire, possesses many scientific institutions, partly belonging to the city and partly supported by the liberality of the wealthy inhabitants. One of these is an ethnological museum, very rich in interesting specimens, the collection of which has been facilitated by the free communication between distant countries and this great seaport, the largest on the continent. There are also a museum of antiquities, a museum of arts, an observatory, a chemical and a physical State laboratory, an institution for natural history, a botanical institute, and a great public library. With respect to medical science there are a number of good hospitals, of which the new State hospital at Eppendorf is the largest; it is also one of the best equipped on the continent. The Institution for Tropical Diseases established by the Imperial Government will be in connexion with the hospitals of Hamburg. Representatives of the above-mentioned institutions have occasionally delivered popular lectures in Hamburg, but there has not hitherto been any systematic course of study. As a first step in the direction of university organisation the Senate of Hamburg has submitted a Bill to the representative assembly of the city providing that the heads of the above institutions, together with a staff of lecturers, shall form the "teaching body" of Hamburg and shall be entitled to elect a rector. The number of lectures will be augmented, and it is hoped that the combination of the individual scientific institutions may lead in course of time to the formation of a fully-equipped university to which students may be admitted.

Feb. 19th.

ROME.

(FROM OUR OWN CORRESPONDENT.)

Apparent Death and Premature Burial.

SHORTLY after the great cholera visitation of 1866 Dr. Filippo Pacini, professor of anatomy in Florence (who gave his name to the "corpuscula nervosa"), called attention to this subject in a memorable paper. He cited not a few cases in which the patient, certified as dead, had come to life on his way to the cemetery, and he started the not unnatural —if horrible—inference that the resuscitation referred to may in several instances have come about within the grave itself. The rapidity, not to say the haste, with which burial follows death in Italy gave colour to the gruesome surmise. Indeed, the next great cholera epidemic—that of 1884—afforded something very like a case in point. At Turin a well-known physician who had lived through the epidemic was at last seized with the malady and, worn out by professional duty, failed to rally. Certified as dead, he was laid out for the offices of the undertaker in a room adjoining that in which his wife and family were awaiting his consignment to the coffin. To their horror and amazement he appeared at the door in his winding-sheet, and, in a voice barely audible, reproached them for having left him so long uncared for. Every effort was immediately made to ensure his rescue, but in vain. He relapsed, and death, real this time, not "apparent," supervened. Had the undertaker arrived 20 minutes sooner the unfortunate man would have revived under the coffin lid. The incident made a profound impression at the time and restarted, while redoubling, the apprehensions aroused by Pacini. Now we are having another such recrudesence of these, the heavy mortality due to influenza and the all too brief interval between the issue of the death certificate and the interment or cremation of the victim sufficing to re-awake them. Unfortunately for the peace of mind of the public a highly sensational, but quite authentic, case of the kind—not, however, occurring after influenza—is reported from Southern Italy. At Lecce a young country woman, as the result of a very difficult confinement necessitating much unavoidable intervention, appeared to have died, her offspring, also given up for dead, remaining in utero. In accordance with Italian custom the funeral was fixed for the next day and the body was left in its coffin in the mortuary chapel adjoining the cemetery. Early in the morning, some hours before the burial, a photographer who was commissioned to take the poor woman's likeness obtained leave from the *custode* of the chapel to open the coffin. Hardly was this done when the two men were shocked to find that the corpse, which had been placed on its back, was now on its side and close to it was a lovely child wanting both arms, which had been detached during the obstetric operations. The judicial authorities, including the "giudice istruttore," were at once called in and found that the woman had come out of the lethargic condition in which she had appeared as dead and had given birth to her child in the coffin—"dopo atroce agonia," says their report, resulting in the suffocation of both. It seems from evidence extracted from the *custode* that during the night while a storm was raging he had heard feeble cries as of some one calling for help in the mortuary chapel. The tragedy, for such it is, has evoked much comment, pending the official inquiry now in progress.

The English-speaking Practitioner in Italy.

A Cabinet Council has just been held for the purpose of examining the Bill shortly to be introduced into Parliament for regulating the practice of their profession by foreign medical men in Italy. "Our laws," says the official report communicated to me, "allow such medical men to practise among their compatriots resident in the country; but to secure their confining their practice within these limits is very difficult, for it is found that they not only encroach on the *clientèles* of other nationalities, but even on the *clientèle* exclusively Italian. The medical men of Italy, therefore, crave of the Government to obtain for them reciprocal rights, that is, to get them entitled to practise abroad, without their being obliged, as at present, to undergo a fresh examination in the language of the country where they wish to practise. Foreign Governments," continues the report, "refuse this reciprocity. Hence our Government in self-defence, while wishing to interpret professional liberty in the most liberal

spirit, will have to insist on an examination in Italian to be undergone by those foreign practitioners who practise in Italy." It is not said whether the contemplated legislation is to be retrospective and whether the English-speaking practitioner, for instance, who has long been settled in Italy will virtually have to qualify anew by taking an Italian degree. Be this as it may, the object of the Bill is clearly to exclude the foreign, particularly the British or American, practitioner and to open to Italian medical men the lucrative *clientèle* hitherto enjoyed by graduates from the British Isles or the United States.

Feb. 18th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

An Anti-Vivisection Bill introduced in the United States.

READERS of THE LANCET may have read that an anti-vivisection Bill has recently been introduced into the United States Senate by Senator Gallinger, the measure having for its nominal object the prevention of cruelty to animals in the District of Columbia. The District of Columbia has twice favourably reported on the Bill so that it would appear that this ill-advised action on the part of the Senator may have the effect of very considerably curtailing the scope of scientific research in that portion of the United States. Dr. W. W. Keen of Philadelphia, the President for this year of the American Medical Association, refers to the matter in these well-chosen words: "The Bill is speciously drawn up as if it were intended only in the interest of prevention of cruelty to animals. The real object of the Bill is twofold—first to prohibit vivisection and secondly to aid the passage of similar Bills in all the State legislatures. I need hardly point out that this would seriously interfere with or even absolutely stop the experimental work of the Bureau of Animal Industry and of the three medical departments of the Government—the army, the navy, and the marine hospital service. The animals themselves might well cry out to be saved from their friends. No more humane work can be done than to discover the means of the prevention of diseases which have ravaged our flocks and herds. All those who raise or own animals are vitally interested in the preservation of their health and the prevention of disease. The inestimable value of these scientific researches as to the prevention and cure of disease among human beings it is superfluous for me to point out. Modern surgery and the antitoxin treatment of diphtheria alone would justify all the vivisection ever done." Undoubtedly the majority of the physicians in the United States are in accord with Dr. Keen's views, and it is to be hoped that the efforts of the American medical profession may be successful in defeating the Columbian Anti-Vivisection Bill. The anti-vivisectionists in America are chiefly composed of unscientific enthusiasts or of notoriety mongers.

Rapid Transit for New York City.

The means employed in New York to convey passengers have long been remarkable for their inadequate accommodation at certain periods of the day as well as for many insanitary features. The modes of locomotion chiefly in vogue are the overhead steam railways and on the level street-cars propelled by electricity. The elevated railways are in several respects a disgrace to a city of the size and wealth of New York and have been freely pilloried in the lay and medical journals. The stations are for the most part uncomfortable, dirty sheds; while the carriages themselves are lacking in many points usually considered necessary to health. In regard to the street system of transit much improvement has been effected of late, the cars in all the principal thoroughfares are driven by electric power, and the comfort of passengers is fairly well looked after. Faults may be found with the methods of heating and ventilation and with some less important details, but the great blot on the whole system of locomotion in New York is the excessive overcrowding in the morning and evening at the time when people are going to and from their work. No limit is placed on the number of persons carried, and the consequence is that a car calculated to seat 20 passengers will for an hour or two before and after business hours have at least twice that number inside and probably 20 outside, hanging on the steps or in any place where they can gain a footing. This state of affairs, as may be well imagined, does not conduce to the health, comfort, or temper of those who are obliged to make use of one or other of the transit systems of New York, and the cry has for a long time been that radical reforms must be introduced. The fact is perfectly plain that the only really effectual remedy will be to relieve in some way the overgorged traffic. It is just as evident that this desirable relief can be brought about but in one manner, which is by introducing an underground system. The capitalists interested in the existing methods of transit have fought long and vigorously against this innovation, but have apparently been beaten, for the news has gone forth that the contract has been given for a tunnel measuring several miles and costing $30,000,000 to run through the heart of New York.

Medical News in American Lay Journals.

A prominent feature in up-to-date American lay journalism is the great interest which is taken in medical matters. This is doubtless done mainly for sensational purposes, and the more gruesome the account of some simple surgical operation given by the reporter the better does it suit the literary palate of a certain class of readers. Often it happens that the reporter makes ludicrous mistakes which, of course, are read with some amusement by members of the medical profession. Dr. Nelson W. Wilson of Buffalo, writing on the subject in the *American Medical Quarterly* for September last, gives some laughable instances of mistakes made by journalists who were ignorant of medicine or of the anatomy of the human body. Dr. Wilson speaks of the first instance that came under his notice as follows: "One of the most amusing errors which I have seen recorded in print appeared in a Buffalo newspaper. The reporter, who was young, was present at an autopsy and was deeply interested. As the organs were removed he was told what they were. He expressed surprise at the size of the liver. There was a pathological condition of the spleen which excited comment among the examiners. The reporter shortly afterwards left. The next issue of his newspaper contained this statement: 'A curious condition existed. In addition to the liver being very large a smaller liver was found some distance away in the left side of the body.' A physician who was 'sterilising catgut in boiling alcohol' had the misfortune to set fire to his clothes. A New York paper described the after-events in the following lurid terms: 'Across the lawn to the operation section he wildly ran, the flames enveloping him from head to foot. Unannounced the man of flames threw open the door of the operating-room, dashed in among physicians, nurses, and attendants, who were busy performing a delicate operation on a morphine unconscious woman, and before they recovered from their fright the man was so seriously burned that his recovery is most improbable. When Dr. —— entered the operating-room the surgeons were at the most critical stage of their work. "Save!" he yelled to the chief surgeon as he bolted into the room, "or I will be burned to a crisp." ..... It is a remarkable thing that the young woman on the operating-table never recovered consciousness during all the excitement. She was entirely oblivious of all the exciting events that transpired until she came to and was told of them. It is doubtful whether she would have stood the fright if she had come to when the burning man had rushed into the room.'" Dr. Wilson relates many more accounts of medical and surgical happenings as told in American lay journals, but the preceding will suffice to show that the American reporter if not to be relied upon for accuracy is well able at least to provide reading for the patrons of his newspaper which will compare with that of any papers in the world for word painting.

Feb. 10th.

Obituary.

PROFESSOR LUDWIG MEYER.

WE regret to learn that Professor Ludwig Meyer, Director of the Provincial Asylum and of the University Clinic at Göttingen, died at his post of duty on the 8th inst. Professor Meyer was a distinguished physician in the department of mental medicine and early in life he strenuously adopted the non-restraint principles advocated by Dr. Conolly. In 1866 he

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was promoted from Hamburg to Göttingen and throughout his long and active life he maintained his position in the forefront of scientific and administrative work. Professor Meyer wrote many articles on subjects connected with nervous and mental diseases which commanded respectful attention. He was specially proud of the institution of clinical wards in connexion with the German universities for the purposes of teaching and treatment. His enthusiasm and devoted attention to duty was an inspiration to those who were fortunate in his friendship, and his death will be deeply felt by his colleagues at home and abroad.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Gabriel Tourdes of Nancy, aged 90 years. He was the son of a professor of medicine in the old Strasburg Faculty in which he himself afterwards held the combined chairs of Forensic Medicine and Pathology until the organisation of the German University of Strasburg after the war in 1871. He then migrated to Nancy, in which faculty he held the chair of Forensic Medicine until 1888, since which he has lived in retirement. He was a somewhat prolific writer on medico-legal topics and also on medical geography.—Dr. Philipp Knoll, who was recently appointed to the chair of General and Experimental Pathology in Vienna. He had previously held a similar post in the German University of Prague where he was the means of establishing a laryngological institute. He wrote a large number of papers on various subjects connected with experimental pathology. In addition to his scientific labours he found time to carry on an energetic political campaign in the interests of the German as opposed to the Bohemian population of Bohemia.—Dr. Albert Edward Hoadley, professor of Orthopædic Surgery in the Chicago College of Physicians and Surgeons.—Dr. O Widman, extraordinary professor of Medical Pathology in the medical school of Lemberg.—Dr. Coste, formerly a French senator.—Dr. Charles Delstanche, lecturer on Aural Surgery in the University of Brussels, aged 59 years.

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The following gentlemen, having passed the necessary examinations and conformed to the by-laws, have been admitted Members of the College:—

Alfred Parker Ambrose, Westminster Hospital; Miguel Arango, University of Bogota, Columbia; Frank Atthill, Charing-cross Hospital; William Edward Bamber, Owens College and Royal Infirmary, Manchester; Lionel Jasper Bartlett, St. George's Hospital; Basil Sorley Bartlett, Francis Reinagle Barwell, and William Bastian, University College Hospital; Hugh Wansey Bayly, Cambridge University and St. George's Hospital; Frank Miller Bingham and Edward Wemyss Browne of St. Thomas's Hospital; Anthony Fewster Blake, London Hospital; Francis Dawson Blandy, Middlesex Hospital; Hubert Penrose Bradley, Cambridge University and London Hospital; William Philip Sutcliffe Branson, Cambridge University and St Bartholomew's Hospital; Clement Arthur Douglas Bryan, Guy's Hospital; Edward Payton Burns, Queen's and General Hospitals and Mason College, Birmingham; John Cameron, Edinburgh University; Thomas Chetwood, London Hospital; Harry Norman Rix Child, University of New Zealand and Middlesex Hospital; John Aylward Churchill, St. George's Hospital; John Moore Collyns and Charles Vivian Cornish, St. Bartholomew's Hospital; Walter Edward Cooper, University College Hospital; Gilbert Edgar Cope, Westminster Hospital; John Francis Cunningham, St. Thomas's Hospital; Henry Newcombe Clarke and Aubrey Hugh Davies, Cambridge University and Guy's Hospital; Percy Clarence Douglas, St. Mary's Hospital; Henry Durbridge, Guy's Hospital; Gerald Meade Eastment, Middlesex Hospital; Frederic George Henry Edwards, St. Thomas's, Middlesex, and London Hospitals; Thomas Crisp English, St. George's Hospital; Robert Fell and Henry Bertram Foster, Guy's Hospital; Herbert Wortley Fisher, London Hospital; John Edmund Francis, University College Hospital; William Varé Chalmers Francis, Westminster Hospital; Thomas Gillespie, Cambridge University and St. Bartholomew's Hospital; Guillermo Gomez, University of Bogota, Columbia; Arnold Saxty Good, St. George's Hospital; Nathaniel Grace, McGill University, Montreal, and St. Bartholomew's Hospital; Wilfred St. George Grantham-Hill, Ernest William Holyoak, and John William Hunt, St. Mary's Hospital; William Henry Harland, Middlesex Hospital, Owens College, and Royal Infirmary, Manchester; Francis Raymond Mitchell Heggs, Mason College, Birmingham, St. Mary's and London Hospitals; Richard Farrar Hiley, Cambridge University and St. Thomas's Hospital; Edward Falkner Hill, Owens College and Royal Infirmary, Manchester; Samuel Prince Hopewell, London Hospital; Richard Rotherwell Horley, Middlesex Hospital; Edmund Hudson, Owens College and Royal Infirmary, Manchester, and St. Thomas's Hospital; John Warwick Illius, St. Bartholomew's Hospital; Orlando Inchley, and Arnold Woodford Izard, Cambridge University and St. Bartholomew's Hospital; Frederick Burroughs Jefferies, King's College Hospital; Robert George Johnson, University College and Royal Infirmary, Bristol; Joseph Edward Judson, Owens College and Royal Infirmary, Manchester; Stanley James Kerfoot, London Hospital; Robert Blair Kinloch, University College of South Wales, Cardiff, and St. Thomas's Hospital; Charles Lees and Percy Augustus Longhurst, Charing Cross Hospital; Harold Samuel Libby, St. Thomas's Hospital; Llewellyn Lindop, St. Mary's Hospital; Charles Thomas McClure, London Hospital; William Augustine McEnery, Richard William Herbert Meredith, and Percival Thomas Nicholls, Middlesex Hospital; Oswald Marriott and Bertram Wilmore Moss, Guy's Hospital; Herbert Alfred Mason, Firth College and General Infirmary, Sheffield; Leonard John Pavillet Mordaunt, St. Mary's and Charing Cross Hospitals and Edinburgh University; John Wilfred Nunn, St. Bartholomew's Hospital; Harold Rothery Nutt, St. Mary's Hospital; Herbert John Orford, Mason College and Queen's and General Hospitals, Birmingham; Vivian Bernard Orr, Melbourne University and Westminster Hospital; Thomas Dainly Paddock, University College and Royal Infirmary, Liverpool; William Hodgson Park, Charing Cross Hospital; John Frederick Paul, St. George's Hospital; Allan Campbell Pearson, Cambridge University and St. George's Hospital; William Edward Peck, University College Hospital; Claud Maxwell Pennefather, Durham University and St. Bartholomew's Hospital; Sydney Pern, St Thomas's Hospital; Charles Ayre Peters, McGill University, Montreal, and St. Bartholomew's Hospital; Henry George Pinker, St. Bartholomew's Hospital; Redcliffe Nathan Salaman, Cambridge University and London Hospital; James Herbert Sanders and George Herbert Spencer, London Hospital; Edward Mells Saunders, King's College Hospital; Michael Sheehan, Queen's College and Northern Infirmary, Cork; Alfred Ernest Softly and Henry Zouch Stephens, St. Thomas's Hospital; Alfred Richard Spencer and Edmund Hamilton Blake Stanley, University Cottage Hospital; Phillip Graham Stock, University College and Royal Infirmary, Bristol; William Sutherland, University of New Zealand and University College Hospital; William Benjamin Batchelor Taylor and Henry Thwaites, London Hospital; Christopher Thackeray, Firth College and General Infirmary, Sheffield, and Owens College and Royal Infirmary, Manchester; Bernard Rensbaw-Beckit Truman, Cambridge University and St. Bartholomew's Hospital; Walter Edward Turner and Alfred Dittop Benedictus Von Rosen, St. Mary's Hospital; John Valérie, St. Bartholomew's Hospital; Robert Alexander Walker, Cambridge University and St. George's Hospital; Richard Warren, Oxford University and London Hospital; Robert Nimmo Watson, Westminster Hospital; Charles Herbert Welch, University College and Royal Infirmary, Bristol; William Reginald Eyton Williams, Edinburgh University and Guy's Hospital; Richard Le Geyt Worsley, St. George's Hospital and Durham University; Thomas Preston Yates, Owens College and Royal Infirmary, Manchester.

UNIVERSITY OF CAMBRIDGE.—At the congregation held on Feb. 15th, the graces proposing to abolish the order of merit in the Mathematical Tripos were rejected. The following medical degrees were conferred:—

M.B. and B.C.—A. C. Fry, Pembroke; H. Glasier, Emmanuel.
B.C.—H. M. Harwood, Trinity; J. A. Nixon, Caius.

PRESENTATIONS TO MEDICAL MEN.—At the Institute, Woburn Sands, Beds., on Feb 9th, Mr. Robert L. Brander, M.B. Aberd., of Aspley Guise, Beds, was presented with a testimonial for his meritorious medical attendance on the night of Nov. 23rd last, on a well-sinker, who was entombed for some time while working in a shaft, the sides of which collapsed. Dr. Brander was sent for, and on seeing the body he made strenuous efforts for several hours to produce resuscitation, but life was extinct. Recently, in remembrance of Dr. Brander's exertions on the occasion, it was thought they deserved some public recognition; accordingly subscriptions for that purpose were collected, to which friends and the villagers generally in the district freely responded, the result being the presentation of a purse containing money and an illuminated address.—Mr. William C. Smith, M.B. Edin., of Great Harwood, Lancashire, was the recipient of a pair of binocular field-glasses on Feb. 6th from the members of the local golf and union clubs as a farewell offering on his leaving for the front in the South African war.—On Feb. 14th, at the Municipal Offices, Liverpool, Mr. E. P. Manby, M.D. Cantab., the assistant medical officer of health, who is about to leave for London, having been appointed on the medical staff of the Local Government Board, was presented with an inkstand, suitably inscribed. Dr. Hope, in making the presentation on behalf of the staff, wished Dr. Manby every happiness and success in his new position.—On Feb. 13th the members of Court Perseverance of the Ancient Order of Foresters, Bath, presented Mr. J. W. Wigmore, M.D. R U.I., with an inkstand engraved with the following inscription: "Ancient Order of Foresters, Feb. 13th, 1900. Presented to J. W. Wigmore, Esq., M.D., on his resigning the duties of medical officer to Court Perseverance after 20 years' faithful service."

HOME FOR INEBRIATES AT CARDIFF.—At the meeting of the Cardiff Watch Committee held on Feb. 14th a sub-committee recommended that 10 acres of land should be purchased and that a home to accommodate 50 inmates (25 of each sex) should be erected at a cost of £10,000. The cost of maintenance was estimated at 15*s.* per patient, towards which the Government allow half a guinea, and it is considered that the annual expenditure would be about £830. The committee unanimously adopted the report.

FREEMASONRY.—The installation meeting of the Phœnix Lodge, 904, has just been held at the Masonic Buildings, High-street, Rotherham, when the new Worshipful Master, Bro. Charles A. Locke, L.R.C.P., Lond., M.R.C.S. Eng., Dist. Assist. G.D.C., Barbados, Senior Warden, who had been elected at the regular lodge meeting in January, was installed into the chair of the lodge by W. Bro. James Mellors, the retiring Master, assisted by W. Bro. John Gibbs, P.M., P.P.G. Treasurer. There was a large attendance and after the ceremony about 60 brethren dined together.

THE forty-third annual meeting of the subscribers and friends of the Bradford Eye and Ear Hospital was held on Feb. 16th, the Mayor of Bradford presiding. The hospital draws patients from a very wide area, the number during the past year being 6126, of whom 907 were treated for diseases of the ear. There have been 992 in-patients, giving a daily average of 27 and an average stay of 10 days. The number of major operations was 970, of which 116 were flap extractions of senile cataract and 28 removal of lens for high myopia. The number of out-patient attendances was about 15,000, necessitating now a daily attendance in that department. The income was £2454 and the expenditure £2835. The hospital has invested funds amounting to £15,000.

A NEW ISOLATION HOSPITAL FOR SOUTHAMPTON.—On Feb. 12th the Mayor of Southampton, Alderman G. A. E. Hussey, formally opened the new isolation hospital for Southampton which the town council decided upon erecting so far back as 1896. The buildings stand upon a site of 10 acres, having a loam and gravel soil. At present the buildings consist of an entrance lodge, an out bathing station, a mortuary, an administration block, and four pavilions of wards. In all there are 72 beds. Besides these buildings there are a laundry and an ambulance block, with stables, coach-house, and rooms for the male staff. The wards are floored with polished narrow battens of pitch pine and all angles are rounded off. The walls are cemented and painted a pale apple-green colour. All the buildings with the exception of the ambulance block are lighted with electricity. Southampton stood particularly in need of an isolation hospital owing to the prosperity of the place depending in such large measure upon the docks. It is thus specially exposed to the chance of infection from without and unless it is known that every precaution is taken against the spread of infection great injury would accrue to the shipping industry and thus to the trade of the port.

PUBLIC HEALTH IN HONG-KONG.—In his annual report for 1898 Dr. F. W. Clark, the medical officer of health of Hong-Kong, states that the estimated population of the colony in the middle of the year was 254,400, including Chinese, 239,210; non-Chinese civilians, 8732; army, 3073; and navy, 3385. No less than 70·9 per cent. of the Chinese population and 58·6 per cent. of the non-Chinese population are males, while considerably more than the half of both classes are between the ages of 20 and 45. The population of the city of Victoria is given as 164,250 Chinese and 6950 non-Chinese. The city is divided into 10 health districts, in two of which, covering each an area of 23 acres, there is extreme overcrowding, the number of persons per acre being 982 3 and 760·5 respectively. The number of births registered during the year was 1206, giving a general birth-rate of 4 7 per 1000 as compared with 5·5 per 1000 in 1897. In this colony there is a great preponderance of male over female births; in Great Britain and in temperate climates generally the proportion is 104 male to 100 female births, but in Hong-Kong the proportion is among the white races 128 males to 100 females. The total number of deaths registered during the year was 5674, as compared with 4688 during 1897. The death-rate for 1898 was therefore 23·3 per 1000 The total deaths among the Chinese were 5383, or 22 5 per 1000. The death-rates in the non-Chinese community were 16·2 per 1000 among the white races and 33 6 per 1000 among the coloured races. Plague caused 1126 deaths among the Chinese, 40 in the non-Chinese civilian community, and three in the army. Small-pox caused 99 deaths among the Chinese, 11 in the non-Chinese civilian community, and one in the navy. Beri-beri caused 117 deaths, all among the Chinese.

VACCINATION GRANT.—Mr. Philip E. Hill, M.R.C.S. Eng., public vaccinator to the Crickhowell District of the Crickhowell Union, has been awarded the Government grant for successful vaccination for the eleventh time in succession.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Petroleum Question.

THE Government has made it known that it does not see its way to introduce during the present session of Parliament legislation with reference to accidents arising from the use of petroleum lamps. A Bill, however, has been brought in by a private Member for the raising of the statutory flash-point of petroleum oil.

The Inebriates Act in Scotland.

There is in course of passage through the House of Lords a Bill designed to strengthen the administration of the Inebriates Act in Scotland. It confers on the local authorities increased powers of assistance for the establishment and maintenance of inebriate reformatories, and it makes eligible for committal to these institutions persons convicted of drunkenness and disorderly conduct in a public place.

HOUSE OF LORDS.

THURSDAY, FEB. 15TH.

Isolation Hospitals.

The Earl of LICHFIELD, in moving the second reading of the Isolation Hospitals (Amendment) Bill explained that the object of the measure was to improve the facilities for the provision of sufficient isolation hospital accommodation. The Act of 1893 empowered county councils to provide isolation hospitals and to group districts together for that purpose. The Local Government Board, however, had decided that where a local authority had already provided sufficient hospital accommodation, although it was willing to be included in a hospital district, it could not sell or lease its existing hospital to a hospital committee constituted under the Act of 1893. It was chiefly to remedy this that the Bill was introduced, and he urged the Local Government Board to take the Bill up so that it might pass the House of Commons.—Lord HARRIS intimated that the Local Government Board had no objection to the Bill and said he would bring the request of the noble Earl before Mr. Chaplin.—The Bill was read a second time, and at the following sitting the House passed it through Committee without amendment.

The Medical Examination of Volunteers.

Earl BROWNLOW called the attention of the House and the Government to the inconvenience caused by the rejection of Volunteers for service in South Africa by the army medical officers after the men have got their clothing and equipment. The noble Earl spoke of men having to crawl home to their native towns in humiliation and disgust.—The Marquis of LANSDOWNE, after expressing sympathy with the complaint, intimated that a regulation to this effect had been drafted—viz.: "When a Volunteer commanding officer receives an application from any Volunteer he will at once have him medically inspected, and when he has received sufficient applications from Volunteers who have been passed medically fit to form not less than a section he will so inform the officer commanding the regimental depôt to which the battalion is affiliated, who will then have them attested." To this he proposed to add "medical inspections may be carried out by any medical officer holding a commission in any force of Her Majesty's service."

HOUSE OF COMMONS.

THURSDAY, FEB. 15TH.

The Purity of Oysters.

Mr. CHAPLIN, in reply to a question on this subject, said that he did not think it would be possible to introduce an Oysters Bill during the present session. He was glad, however, to be able to say that very considerable improvements had been made in the oyster-beds and that further improvements were in contemplation.

Introduction of Sir Michael Foster.

The new representative of the University of London, Sir Michael Foster, was introduced by Mr. Jebb and Sir William Anson and took the oath and his seat. The two sponsors are representatives respectively of Cambridge and Oxford Universities.

FRIDAY FEB. 16TH.

Medical Appointments in Londonderry.

Mr. ARTHUR MOORE asked the Attorney-General for Ireland whether the attention of the Irish Government had been drawn to the fact that almost all the public appointments in the city of Derry were in the hands of the Protestant minority; and whether, in view of the vacancies caused by the death of Sir William Miller, due consideration would be given to the claims of Roman Catholic and Nationalist medical men before filling these appointments.—Mr. ATKINSON: The meaning of the expression "public appointments" in the first paragraph is not very

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clear. If the hon. Member refers to the officers of local bodies I would remind him that these officers are appointed independently of the Government. And as regards the officers whose appointments are subject to the control of the Government I have no information as to the politics or religion of such officers. With respect to the second paragraph the legitimate claims of all candidates will be carefully considered.

Deaths from Disease at the War.

Sir WALTER FOSTER asked the Under Secretary of State for War whether he could state approximately the number of deaths from disease among the forces serving in South Africa and if possible the number of those who had succumbed to enteric fever.—Mr. WYNDHAM: The figures are approximately—deaths from enteric fever 240, deaths from other diseases 268, making a total of 508.

Infectious Disease in the Post Office Service.

Sir WALTER FOSTER asked the Secretary to the Treasury, as representing the Postmaster-General, whether servants of the Post Office were compelled to notify to the department the outbreak of infectious diseases in their homes; and whether such officers were generally prevented from performing their official duties, and compelled to remain away from office until medical sanction was given, whether a regulation had recently been issued stating that this enforced absence would be treated as sick leave, and whether he could state if it was intended to count this time when an officer's superannuation, owing to illness, was being considered.—Mr. HANBURY: Post office servants are required to report to their superior officer any case of scarlet fever, small-pox, typhus fever, cholera, diphtheria, measles, or typhoid fever, occurring in their homes. Should the case be one of the first four of these diseases the man is not allowed to attend for duty; but this practice is not maintained as regards diphtheria, measles, or typhoid fever, except under special circumstances. Full pay is allowed in all cases of compulsory detention from duty from the above causes; but in calculating the amount of sick leave which an officer may receive on full pay during the year, the period of any such compulsory absence is included.

MONDAY, FEB. 19TH.

The Report of the Malarial Commission.

Mr. WEIR asked the Secretary of State for the Colonies whether he could say when the report of the Malarial Commission would be issued, and would he state whether Her Majesty's Commissioner had yet advised the establishment of a sanatorium in the Shire Highlands, British Central Africa.—Mr. CHAMBERLAIN: The report is not expected before the close of the year. The question of a sanatorium in the Shire Highlands has not been raised by Her Majesty's Commissioner. There is a hospital at Blantyre of which the Administration will assume control on April 1st next, and a staff of nurses paid from Protectorate funds.

The Removal of Casualty Cases in Glasgow.

Sir CHARLES CAMERON asked the Lord-Advocate whether the Scottish Local Government Board had yet considered the change of practice recently introduced in Glasgow in dealing with cases of debility and injury brought to the police offices, and subsequently removed to the parochial hospital, whereby pauper patients were removed to that hospital without any certificate from the parochial medical officer of their fitness for removal; whether the criminal authorities had sanctioned the inspection of the private police books by the parochial officers; and whether the removal of a moribund person on the data contained in these books, and without certificate from the parochial medical officer, would be held to satisfy the requirements of the Poor-Law Act, and on whom, in case of mishap occurring in connexion with a removal so conducted, would legal responsibility rest.—The LORD-ADVOCATE: I am informed by the Local Government Board that they have inquired, and find that a slight change of practice has taken place in regard to cases occurring during the night in the portion of the amalgamated parish formerly the City Parish of Glasgow. These cases used to be removed direct to the poorhouse by cab, &c., by the police, and were admitted without communication with the parochial authorities or a certificate of any kind. Now a telephone message is sent to the parochial chambers and the poorhouse ambulance is used for the conveyance of the person to the poorhouse on the casualty surgeon's written recommendation. Casualty surgeons have been instructed to enter in a book kept by them their opinion whether the patient can be safely removed, and such book is to be available to the inspector of poor or his representatives before removing any patient from the police offices to the poorhouse. I may add that the Local Government Board consider this system to be a great improvement on the previous system, and I see nothing in it contrary to the requirements of the Poor-law Act.

TUESDAY, FEB. 20TH.

Medical Organisation for the Army.

Dr. FARQUHARSON asked the Under Secretary of State for War what steps were proposed to be taken in connexion with the scheme of the Government for increasing the efficiency of the Army to create a proper effective medical organisation for the Militia, Yeomanry, and Volunteers, and would it be represented at the War Office by proper staff officers; and if it was proposed to give effect to the numerous recommendations to the War Office to create the bearer companies of the Volunteer infantry brigades separate units, independent of any particular regiment or regiments of the brigade.—Mr. WYNDHAM: This subject is one of the many connected with the organisation of the Auxiliary Forces which are now being considered.

PRESERVATIVES AND COLOURING MATTERS IN FOOD.

EVIDENCE BEFORE THE DEPARTMENTAL COMMITTEE.

WEDNESDAY, FEB. 7TH.

The Committee met again to-day with Sir Herbert Maxwell in th chair.

Mr. ROBERT GIBSON, salesmaster of the Public Creamery Market in Limerick, examined by the Chairman, said that he had been fully 40 years in the butter trade and his experience told him that the use of preservatives was necessary in Ireland. He had tried again and again to do without them and he had always failed to satisfy his customers and had been compelled to fall back upon preservatives. Irish butter had always had a name for keeping, and in consequence it was not treated by customers in the same way as Danish or Normandy butter—that was to say, the Irish butter was kept on hand, while the Danish or Normandy was disposed of quickly. He had a customer in Grantham who kept the butter for four months and who said that it tasted as well at the end of that time as when he received it from Ireland. So satisfied was the witness that preservatives were necessary and that they were wholesome, that all the butter under his control now contained them. The butter he himself ate contained 1 lb. of boric preservative to 112 lb. of butter, which produced an article capable of keeping sweet for at least a month. When he used to eat butter without this preservative, and of course containing salt, he found that he had to take several drinks between meals—not intoxicating drinks, for he was a teetotaller—while now that he ate butter with boric preservative, these between-meal drinks were no longer necessary. His opinion was that for the health of the community and for its pocket the use of preservatives had been an immense advantage. The community were well aware of the practice and therefore there could be no objection to a declaration of the presence of preservatives in butter. On the subject of colouring butter the trade in Ireland was divided.

By Dr. TUNNICLIFFE: The butter he had referred to as keeping sweet for four months contained 1 lb. of boric preservative to 112 lb. of butter, which never worked out on analysis at more than 0·8 per cent.

Dr. A. GRUNBAUM, lecturer on chemical physiology in the University College, Liverpool, said, in answer to the CHAIRMAN, that when he and Professor Boyce were recently on the Continent in connexion with the Sewage Commission they made inquiries as to food preservatives in France, Belgium, Germany, and Austria, but principally in the last two countries. In Germany he found that the law as to food and drugs was hardly more definite than it was here, but there was a circular issued by the Ministry of the Interior and two other Ministries to the various presidents of provinces in which it was said that the addition of preservatives to milk should be prohibited. As the result of this circular by-laws were made and these were put in force by magistrates against whose decisions there was always the right of appeal. As regards wine there was a definite law which prohibited the use of certain substances such as salicylic acid. In the case of the city of Hamburg, on every occasion when boric acid preservative was found in milk there was a prosecution followed in the great majority of cases by a conviction, and the same state of things prevailed in other places. A favourite preservative in Germany was sodium sulphite in minced meat and for its use punishment up to six weeks' imprisonment had been inflicted. In Vienna the law did not actually say that boric acid or formalin or anything of the kind was not to be added to milk but by-laws did so, and lately the city of Vienna got expert opinion on the subject to the effect that these preservatives should be forbidden. It might be taken that the general drift of opinion in Germany and Austria was against the use of these preservatives. For instance, a law was now being formulated in Prussia in which the addition of borax or boric acid preservative to meat would in all probability be prohibited. In Switzerland there was a direct prohibition against the importation of meat with the addition of borax or boric acid.

By Dr. BULSTRODE: He should say that preservatives in milk had been prohibited in Germany on the general idea that they, as a whole, would prove injurious or might prove injurious. In 1884, when the circular he had mentioned was sent out, it was stated that the addition of preservatives would particularly be likely to injure children. It was only occasionally that formalin was found in Germany. In Hamburg it had only been found once although it had often been looked for, while as to salicylic acid it had been found two or three times but not within the last year. He could not say whether the legislation of prohibition in Germany was based upon the evidence of expectation or upon experimental evidence, though in the case of sodium sulphite he knew that various experts had given evidence as to the symptoms which follow its administration. The use of sodium sulphite in minced meat was condemned because among other things it made stale meat look like fresh and because the food was largely used for invalids. The general trend of the medical evidence was that this material caused diarrhœa and indigestion. In Germany it had been decided that the amount of sulphate of copper required to colour peas was so small that it would not have an injurious effect, and the use of sulphate of copper for this purpose in minute quantities was not prohibited. He found that the medical profession in Germany had a strong feeling that the addition of these preservatives was undesirable. They based that feeling on general principles and on the desirability of the medical man knowing what his patients were taking. The city of Berlin, with a population, roughly speaking, of 1,500,000, was supplied with milk free from preservatives.

By Dr. TUNNICLIFFE: Both in Germany and in Austria there was a law forbidding the use of preservatives in beer.

By the CHAIRMAN: It seemed to him that on general grounds preservatives should be forbidden because, so far as they knew, what was injurious to bacteria was also injurious to the cells of higher developed organisms, and although in the latter case they were capable of replacing, which bacteria would not be, it did not appear to him that the higher developed organisms should be called upon to replace cells which had been destroyed by disinfectants. He thought that they should aim not at antiseptic food but at aseptic food, just as in surgery they aimed at aseptic surgery. The great point with him was that they had not yet got any antiseptic which while killing bacteria would not injure living cells. Declaration of the presence of a preservative would, in his opinion, be an advantage. He agreed that much was to be learned from experiments on lower animals, but it seemed that some lower animals stood unnatural additions to food better than human beings.

The Committee then adjourned.

BOOKS, ETC., RECEIVED.

CARRÉ ET C. NAUD, Paris.

La Peste et Son Microbe: Sérothérapie et Vaccination. Par Dr. Netter. 1900.

CHAPMAN AND HALL, London.

A Text-book of Physiological Chemistry. By C. Hammarsten. Authorised Translation from the author's fourth German edition by J. A. Mandel. Third edition. 1900.

CLARK, T. & T., George-street, Edinburgh.

What is Thought? By J. H. Stirling, LL.D. Edin. 1900. Price 10*s.* 6*d.*

CORNISH BROTHERS, New-street, Birmingham.

The Bradshaw Lecture on the Causation of Functional Heart Murmurs. By A. Foxwell, M.A., M.D. Cantab. 1899.

DORNAN, W. J., Philadelphia.

Transactions of the American Gynecological Society. Vol. xxiv., for the year 1899. 1899.

FANNIN AND CO., Grafton-street, Dublin.

Transactions of the Royal Academy of Medicine in Ireland. Vol. xvii. Edited by J. B. Story, M.B., F.R.C.S. 1899.

FISCHER, G., Jena.

Mittheilungen aus der Medizinischen Klinik zu Upsala. Von S. E. Henschen. Zweiter Band. 1899.

FUNK AND WAGNALLS COMPANY, London and New York.

The Cyclopedia of Classified Dates, with an Exhaustive Index. By Charles E. Little. 1900.

GLAISHER, H. J., Wigmore-street, Cavendish-square, London.

Consumption: its Nature and Treatment, with a Chapter on Bacteria and Antiseptics. By Wm. H. Spencer, M.D. Cantab., M.R.C.P. Lond. 1900. Price 1*s.* 6*d.* net.

JOHNSTON, G. P., Edinburgh.

The Early Days of the Royal College of Physicians of Edinburgh. By the President, Robert P. Ritchie, M.D. Edin., F.R.C.P., F.R.S. Edin. Illustrated. 1899.

KIMPTON, H., High Holborn, London.

Diseases of Children. By G. M. Tuttle, M.D. Series edited by B. B. Gallandet, M.D. Illustrated. 1900. Price 7*s.* 6*d.*

Practice of Medicine. By G. E. Malsbary, M.D. Series edited by B. B. Gallandet, M.D. Illustrated. 1900. Price 7*s.* 6*d.* net.

Bacteriology in Medicine and Surgery. By Wm. H. Park, M.D., assisted by A. R. Guerard, M.D. Illustrated. 1900. Price 15*s.* net.

Progressive Medicine; a Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by H. A. Hare, M.D. Vol. iv., December, 1899–1900. Price 12*s.* 6*d.* net.

LEWIS, H. K., Gower-street, London.

Mentally Deficient Children: their Treatment and Training. By G. E. Shuttleworth, B.A., M.D. Second edition. 1900. Price 5*s.* net.

LLOYD, EDWARD, 12, Salisbury-square, London.

The Municipal Year-book of the United Kingdom for 1900. Edited by R. Donald. Price 2*s.* 6*d.*

LUCAS GRÄFE AND SILLEM, Hamburg.

Die Entwicklung des Menschlichen Knochengerüstes während des Fö talen Lebens dargestellt an Röntgenbildern. Von Lambertz 1900.

Die Angeborenen Verbildungen der Oberen Extremitäten. Von Dr. Georg Joachimsthal. 1900.

MACMILLAN AND CO., London.

The Refraction of the Eye, including a Complete Treatise on Ophthalmometry. By A. E. Davis, A.M., M.D. Illustrated. 1900. Price 12*s.* 6*d.* net.

MURRAY, JOHN, Albemarle-street, London.

Kirkes' Handbook of Physiology. By W. D. Halliburton, M.D. F.R.S. Sixteenth Edition. Illustrated. 1900. Price 14*s.*

PERCY LUND, HUMPHRIES, AND CO., Amen-corner, London.

The Illustrated Annual of Microscopy. 1900.

REBMAN, MESSRS., Shaftesbury-avenue, London, W.C.

The Treatment of Pelvic Inflammations through the Vagina. By Wm. R. Pryor, M.D. Illustrated. 1899. Price 8*s.* 6*d.* net.

SCIENTIFIC PRESS, Southampton-street, Strand, London.

The Nursing Profession: How and Where to Train. Edited by Sir Henry Burdett, K.C.B. Second Year. 1900. Price 2*s.* net.

SELL, H., 167, Fleet-street, London.

Sell's Dictionary of the World's Press. 1900. By H. Sell.

SMITH, ELDER, AND CO., Waterloo-place, London.

Saint Bartholomew's Hospital Reports. Edited by N. Moore, M.D., and D'Arcy Power, F.R.C.S. Vol. xxxv. 1900.

SWAN SONNENSCHEIN AND CO., Paternoster-square, London.

Consumption and Chronic Diseases. By Emmet Densmore, M.D. Price 3*s.* 6*d.*

WHITTAKER AND CO., White Hart-street, London, E.C.

Dod's Parliamentary Companion for 1900. Sixty-eighth year. Price 4*s.* 6*d.*

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

ALLAN, C. M., M.D., Ch.M. Edin., has been appointed Public Vaccinator for Stoke.

BAYLISS, RICHARD ARTHUR, M.R.C.S., L.R.C.P. Lond., has been appointed Honorary Medical Officer to the Eastern Dispensary, Bath.

BELL, H. J., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Mortlake Sanitary District of the Richmond (Surrey) Union, vice A. McC. Weir, resigned.

BROOKS, J. H., M.D. Aberd., has been appointed Medical Superintendent of the Infirmary and Medical Officer of the Workhouse and Schools by the Mile End Guardians, London.

BRUMELL, ARTHUR, L.R.C.P. Edin., M.R.C.S., has been appointed Certifying Surgeon under the Factory Acts for the Morpeth District.

CLARKE, S. A., L.R.C.P. Lond., M.R.C.S., has been appointed District Medical Officer for the West Ham Union.

GOFFE, E. G. L., M.B. Lond., L.R.C.P., M.R.C.S., has been appointed Assistant Medical Superintendent of the Infirmary by the Lewisham Board of Guardians.

HICK, JOSEPH, L.R.C.P. Edin., M.R.C.S., has been appointed Certifying Surgeon under the Factory Acts for the East Leeds District.

JOSCELYNE, E. W., M.B., L.S.A., has been appointed Public Vaccinator for No. 3 District of the Steyning Union, vice E. F. Grün.

KENDALL, BERNARD CHARLES, L.R.C.P. Lond., M.R.C.S., has been appointed Honorary Medical Officer to the Helston (Cornwall) Public Dispensary.

KNIGHT, HENRY, M.R.C.S., L.R.C.P. Lond., has been appointed Medical Officer and Public Vaccinator to the No. 3 District of the South Stoneham Union.

LAW, A. T., M.B., C.M. Edin., has been appointed Certifying Surgeon under the Factory Acts for the Kirkoswald District, Cumberland.

LAWRENCE, H. CRIPPS, M.D., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of the Male Department, Cheltenham Training College, vice G. A. Cardew, resigned.

MCCREDIE, ANDREW, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Upper Division of the Parish of Colmonell, South Ayrshire.

MORRISSEY, P. F., L.R.C.P., L.R.C.S. Irel., has been appointed Medical Officer of the Keereen Dispensary.

MORTIMER, J. D. E., M.B. Lond., F.R.C.S., has been appointed *pro tem.* Registrar and Anæsthetist to the Royal Hospital for Women and Children, Waterloo-bridge-road, London. Corrected notice.

OLIVER, A. R., M.B., C.M. Glasg., has been appointed Surgeon to the Glasgow Central Dispensary, vice J. H. Nicoll, resigned.

ORR, VIVIAN B., M.B., B.S. Melb., L.R.C.P. Lond., M.R.C.S., has been appointed Assistant House Surgeon to the Westminster Hospital.

PENDLEBURY, H. S., F.R.C.S., has been appointed *pro tem.* Assistant Surgeon to the Royal Hospital for Women and Children, Waterloo-bridge-road, London. Corrected notice.

RICHARDSON, W. G., M.B., B.S. Durh., F.R.C.S. Eng., has been appointed Assistant Surgeon to the Royal Infirmary, Newcastle-on-Tyne, vice Walter Ridley.

SELBY, J. S. E., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Seventh Sanitary District of the Aylesbury Union, vice J. Shaw, resigned.

SMITH, J. L. M., M.B., C.M. Edin., has been appointed *pro tem.* Local Medical Officer for Lochgoilhead and Kilmorich by the Argyll County Council.

SMITH, L. A., M.B. Lond., L.R.C.P., M.R.C.S., has been appointed Physician to the Eastern Dispensary, Leman-street, London.

SMITH, SIR THOS., Bart., F.R.C.S. Eng., has been appointed Honorary Consulting Surgeon to the Finsbury Dispensary, London, vice Sir James Paget, Bart., deceased.

SMITH, T. H., M.D. Durh., L.R.C.P., L.R.C.S. Edin., D.P.H. Camb., has been re-appointed Medical Officer by the Reddish District Council.

WEARNE, WALTER, M.R.C.S., L.S.A., has been re-appointed Honorary Medical Officer to the Helston (Cornwall) Public Dispensary.

WHITTINGTON, RICHARD, M.B., B.Ch. Oxon., M.R.C.S., L.R.C.P., has been appointed Surgeon to Her Majesty's troops in South Africa.

PRINT IN BINDING

Vacancies.

For further Information regarding each vacancy reference should be made to the advertisement (see Index).

BELGRAVE HOSPITAL FOR CHILDREN, 77, Gloucester-street, London.—House Surgeon for six months. Board and residence, and an allowance of £5.

BIRMINGHAM AND MIDLAND EYE HOSPITAL, Birmingham.—Assistant House Surgeon. Salary £60 per annum, with apartments and board.

BIRMINGHAM AND MIDLAND EAR AND THROAT HOSPITAL, Edmund-street, Birmingham.—House Surgeon, tenable to Oct. 31st, with re-appointment for a further six months, conditionally. Salary at the rate of £40 per annum for the first period, and if re-appointed at the rate of £80 per annum, with board, lodging, and washing.

BIRMINGHAM AND MIDLAND SKIN AND URINARY HOSPITAL.—Clinical Assistant.

BRADFORD ROYAL INFIRMARY.—House Surgeon, unmarried. Salary £110 per annum, with board and residence.

BRECON INFIRMARY.—Resident House Surgeon, unmarried. Salary £90 per annum, with furnished apartments, board, attendance, fire, and gas.

BRISTOL ROYAL HOSPITAL FOR SICK CHILDREN AND WOMEN.—Locum Tenens as House Surgeon for several weeks. Three guineas per week, with furnished rooms and attendance.

CARMARTHENSHIRE INFIRMARY, Carmarthen.—Resident Medical Officer for 12 months, unmarried. Salary £100 per annum, with furnished apartments, board, attendance, fire, gas, and washing.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's Inn-road, W.C.—House Surgeon. Salary £50 per annum, with board and residence in the hospital.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Clinical Assistant. Tenable for three months on payment of £8 8*s*.

CHELTENHAM GENERAL HOSPITAL.—Junior House Surgeon for two years; unmarried. Salary £45 per annum, with board, lodging, and washing.

CITY OF LIVERPOOL.—Visiting Physician to the City Hospital East, Mill-lane, Old Swan. Salary £80 per annum. Apply to the Town Clerk, Town Clerk's Office, Liverpool.

COUNTY BOROUGH OF SOUTHAMPTON.—Assistant Medical Officer of Health, unmarried. Salary £150 per annum, with residence and board. Apply to the Town Clerk, Southampton.

COUNTY BOROUGH OF STOCKPORT.—Medical Officer of Health for five years. Salary £400 per annum, increasing annually by £25 to £500. Apply to the Town Clerk, Town Clerk's Office, Stockport.

CUMBERLAND AND WESTMORLAND ASYLUM, Garlands, Carlisle.—Junior Assistant Medical Officer, unmarried. Salary £100 a year, with board and residence.

DEVON COUNTY ASYLUM, Exminster. Third Assistant Medical Officer. Salary £100, rising to £125.

DURHAM COUNTY ASYLUM.—Assistant Medical Officer, unmarried. Salary £140, rising by yearly increments to £160, with board, lodging, washing, and attendance. Apply to Medical Superintendent, Winterton, Ferryhill.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Glamis-road, Shadwell, E.—House Surgeon. Board, residence, &c., provided, and an honorarium of £25, conditionally.

FARRINGDON GENERAL DISPENSARY, 17, Bartlett's-buildings, Holborn-circus, London.—Resident Medical Officer. Salary £100 per annum, with apartments and attendance.

FRENCH HOSPITAL AND DISPENSARY, 172, Shaftesbury-avenue, London.—Resident Medical Officer. Must speak French. Salary £80 per annum, with full board.

GENERAL HOSPITAL, Nottingham.—Assistant House Physician for twelve months. Salary £100, with board, lodging, and washing in the hospital.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, London.—Junior House Surgeon for six months. Salary at the rate of £30 per annum, with board, lodging, and washing in the hospital.

HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL.—House Surgeon, unmarried. Salary £75 per annum, with residence, board, and washing. Also Ophthalmic Surgeon.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Physician.

HUDDERSFIELD INFIRMARY.—Junior House Surgeon. Salary £60 per annum, with board, residence, and washing.

ITALIAN HOSPITAL, Queen's-square, London, W.C.—House Surgeon. Salary £50 per annum, with board, residence, and laundry.

KENT COUNTY OPHTHALMIC HOSPITAL, Maidstone.—House Surgeon. Salary £100 per annum, with board and lodging in the Hospital.

KING'S COLLEGE, London.—Senior Medical Registrar and Tutor and Senior Surgical Registrar and Tutor. Also Professorship of Materia Medica and Therapeutics.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN, 8, Hunter-street, Brunswick-square, W.C.—Medical Woman for Demonstrator of Anatomy.

MANCHESTER CHILDREN'S HOSPITAL.—Junior Resident Medical Officer for six months, unmarried. Salary at the rate of £80 a year, with board and lodging. Apply to the Secretary, Dispensary, Gartside-street, Manchester.

NEWPORT AND MONMOUTHSHIRE HOSPITAL, Newport, Mon.—House Surgeon. Salary £100 per annum, with board and residence. No stimulants provided.

QUEEN'S COLLEGE, Cork.—Professorship of Materia Medica. Apply to the Under Secretary, Dublin Castle.

ROCHDALE INFIRMARY AND DISPENSARY.—House Surgeon; unmarried. Salary £90 per annum, with board, residence, and washing.

ROYAL ALBERT HOSPITAL, Devonport.—Assistant House Surgeon for six months. Board, lodging, and washing provided.

ST. MARY'S HOSPITAL SCHOOL, Paddington, W.—Demonstrator of Physiology. Salary £100 to £150.

SHEFFIELD ROYAL HOSPITAL.—Two Assistant House Surgeons (Senior and Junior), unmarried. Salary £50 each per annum, with board (exclusive of wine and beer), washing, and lodging.

SOUTH DEVON AND EAST CORNWALL HOSPITAL, Plymouth.—Assistant House Surgeon for six months. Salary at the rate of £50 per annum, with board and residence.

STOCKPORT INFIRMARY.—Junior Assistant House Surgeon for six months. Salary £2 per mensem, with residence, board, and washing.

SUNDERLAND INFIRMARY.—House Surgeon. Salary £80, rising £10 annually to £100, with board and residence.

TAUNTON AND SOMERSET HOSPITAL, Taunton.—Assistant House Surgeon for six months. Salary at the rate of £30 per annum, with board, lodging, and washing.

THE CHIEF INSPECTOR OF FACTORIES gives notice of a vacancy as Certifying Surgeon under the Factory Acts at Bracknell in the county of Buckingham.

UNIVERSITY COLLEGE OF SOUTH WALES AND MONMOUTHSHIRE.—Demonstrator and Assistant Lecturer in Anatomy. Salary £120.

VICTORIA HOSPITAL FOR CHILDREN, Queen's-road, Chelsea.—Resident Medical Officer for six months. Honorarium £25, with board and lodging in the hospital.

VICTORIA HOSPITAL FOR CONSUMPTION, Edinburgh.—Resident Physician. Rooms, board, &c., and honorarium £20 per annum. Also Non-resident Clinical Assistant in Charge of Out-patients. Salary £60 per annum.

WESTERN DISPENSARY, Rochester-row, Westminster.—Locum Tenens, to act as Resident Medical Officer for a few weeks. Remuneration three guineas a week, with residence, attendance, coals, gas, &c.

WEST BROMWICH DISTRICT HOSPITAL.—Resident Assistant House Surgeon.—Salary £50 per annum, with board, &c.

WEST HAM HOSPITAL, Stratford, E.—Junior House Surgeon for one year. Salary £75 per annum, with board, residence, &c.

WORKSOP DISPENSARY HOSPITAL.—Resident Surgeon, unmarried. Salary £120 per annum, paid monthly, with increase when hospital is opened. Rooms, coal, gas, furniture, and housekeeper provided. Apply to Mr. Charles A. Whall, Worksop.

YORK DISPENSARY.—Resident Medical Officer, to visit the sick poor at their own homes; unmarried. Salary £110 a year, with board, lodging, and attendance.

Births, Marriages, and Deaths.

BIRTHS.

DE JERSEY.—On Feb. 19th, at Netherton, Guildford, the wife of Walter B. de Jersey, M.B. Cantab., of a son.

FAGGE.—On Feb. 20th, at St. Thomas's-street, S.E., the wife of C. H. Fagge, M.S., F.R.C.S., of a daughter.

TAYLOR.—On Feb. 11th, at Windsor-place, Cardiff, the wife of Arthur E. Taylor, M.B., of a daughter.

MARRIAGES.

GRAYLING—PERKINS.—On Feb. 15th, at Stratford-on-Avon, Arthur Grayling, M.B. Lond., of Forest Hill, S.E., to Nellie, second daughter of W. E. Perkins, Esq., J.P., of Astwood Bank, Worcestershire.

HARRATT—NOAD.—On Feb. 15th, at St. Andrew's Church, Fulham, Henry Harratt, M.R.C.S., L.R.C.P., of Elmside, Northiam, Sussex, to Winifred Beatrice Innes, second daughter of the late Stephen Innes Noad, of Chigwell Row, Essex.

HEELAS—DENTON.—On Feb. 15th, at Christ Church, Tettenhall Wood, by the Rev. W. D. Heelas, M.A. (brother of the bridegroom), assisted by the Rev. B. Danks, M.A. (vicar), Walter Wheeler Heelas, M.R.C.S., L.R.C.P. Lond., of 2, Clifton-terrace, Wolverhampton, to Jessica Mary, elder daughter of Henry R. J. Denton, Esq., J.P., of Tor Lodge, Tettenhall Wood.

ROWLAND—PLUMER.—On Feb. 20th, at Shoreham, Walter John Rowland, B.A. Lond., M.B. Durh., M.R.C.S., L.R.C.P., son of John Rowland, of Gwydyr House, Bromley, Kent, to Jessie, daughter of Alfred S. Plumer, of Springwells, Steyning, Sussex.

STEEN—LILLEY.—On Feb. 17th, at St. Andrew's-street Chapel, Cambridge, William Carmichael Steen, M.D., Belfast, to Margaret, youngest daughter of the late William Eaden Lilley, Thorpe House, Cambridge.

TOMBLESON—LIVINGSTON.—On Feb. 14th, at St. Mary's, Spring-grove, Isleworth, James Bennett Tombleson, M.B., B.Ch. Oxon., Overtown House, Spring-grove, to Eleanor, youngest daughter of James Livingston, of Claremont House, Spring-grove.

DEATHS.

CARDOZO.—On Feb. 19th, 1900, in London, Samuel Cardozo, M.D., aged 77 years.

DAVIS.—On Feb. 18th, at his residence, Crawford-square, Londonderry, Thomas Davis, M.D., J.P., aged 82 years.

HEATH.—On Feb. 15th, at Exminster, Devon, aged 34 years, Alan Jasper Heath, M.B. Lond., Captain in the Indian Medical Service (Bombay), second son of Christopher Heath, F.R.C.S., Cavendish-square.

N.B.—A fee of 5*s*. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

SHOULD HOSPITAL PATIENTS SMOKE OR PLAY CARDS?

AT the annual meeting of the governors of the Hunts County Hospital at Huntingdon on Tuesday, Mr. Sweeting moved that a new rule to the effect that any patient guilty of misconduct should be liable to dismissal be substituted for Rule 68, which specified certain particular offences for which patients might be dismissed, including among them smoking and playing cards. He said the old rule seemed obsolete. He really saw no reason why a patient should not be allowed to smoke where it could be done without discomfort to other patients, and playing cards, he thought, might be a most desirable recreation for the patients at times. Mr. Layton seconded the motion. Mr. Tillard opposed it. Who, he asked, was to say when smoking would be a discomfort to other patients? If arrangements could be made for separate rooms for smoking it might be more feasible, but he could conceive nothing worse for a patient to whom the smell of tobacco was obnoxious than to have to endure other people smoking. With regard to cards, he was fond of playing cards, but he could not forget that one of the greatest curses of the country was gambling, and he believed gambling with cards was on the increase. There were plenty of other amusements. Books, halma, draughts, and other games were provided, and he did not see why it was necessary to introduce cards. Mr. Heathcote said he was rather in sympathy with Mr. Sweeting's motion, but he thought it might have a tendency to encourage things which it was not desirable should be encouraged. The Chairman (the Earl of Sandwich) said he must admit that the old rule savoured somewhat of the last century. If ever he were admitted as a patient at the hospital, judging from the experience of his past life, the two things he would like to do would be to smoke and play cards. There were several wards and he did not presume that anyone would be entitled to smoke at any time without permission. There were certain wards where he thought smoking could go on without the smallest discomfort to anyone. As for cards, he did not think they were likely to encourage gambling. If there were any tendency to gambling the cards could be stopped by any authority in the hospital, but he did not think they need invent any misdemeanours which were not likely to arise. Archdeacon Vesey said the matron, not knowing of the old rule, had allowed smoking at certain hours and thought it was a good thing. It was of course stopped if there were any patient in the ward whom it would affect. With regard to cards, he agreed that nothing should be done to encourage gambling in any form, but if it were a comfort to any of the patients and it were clearly understood that there should be no playing for money he did not see any difference between playing cards and playing halma or dominoes. He was inclined to think the rule should be a wide one, so as to leave control in the hands of the matron. Mr. Sweeting's proposal to substitute the new rule was then carried.

We are very glad to see that the governors of the Hunts County Hospital arrived at the conclusion to allow both cards and smoking. Recreation is of itself a great aid in the restoration of health and anyone who has been ill and is a smoker knows how pleasurable is the first pipe after a long illness. It will of course be necessary to take care that smoking is not indulged in by some patients to the annoyance or injury of others, and if it is allowed in the wards we think that a limit should be put. With regard to cards we quite agree with Archdeacon Vesey, and we would add that if men want to gamble they will do it and nothing can stop them. Cards are not necessarily the devil's books and their legitimate use might lighten many a weary hour in a hospital. Apart from any moral view of the propriety or otherwise of playing for money, a hospital patient certainly should not do so, for if he can afford to part with any money it should certainly be employed in paying for his maintenance in the hospital.

LUNACY FEES.

To the Editors of THE LANCET.

SIRS,—I have on two occasions certified insanity. The relieving officer states he can only accept certificates from the parish doctor. He notifies the parish doctor, who visits the patient and then notifies it. Is the relieving officer correct in not accepting certificates from private practitioners? I am, Sirs, yours faithfully,

Stamford-hill, N. M.D.

*** Our correspondent is not explicit enough as to what certificates he refers to. If he alludes to a notice of "alleged" lunacy the relieving officer is of course bound without choice to accept notice from any medical man. If he refers to a certificate of unsound mind for the purposes of removal to an asylum the choice of the medical man in these circumstances rests with the justices. Under the Lunacy Act it is the justice who calls in any practitioner he chooses to examine and report (i.e., to certify as to the mental condition) in every case of lunacy, of which information is laid before him by the relieving officer. The question of what medical man is called in and what fee is paid remain absolutely in his discretion. Since the relieving officer is constantly in relation with the justice the latter sometimes accepts the suggestion of the relieving officer as to which medical man should be called in, but most justices are very rightly jealous of their power and would at once check any such suggestion from a relieving officer. The justice is certainly not bound to call in a parish medical officer, though the parish medical officer is often selected because he happens to know most about the case. Many justices employ their ordinary medical attendant, a practice that is open to misconstruction. But it is quite clear that the relieving officer has not any power in the matter. He is merely the agent of the justice to carry out his orders.—ED. L.

PRACTICE AT MONTE CARLO.

To the Editors of THE LANCET.

SIRS,—I should feel greatly obliged if you could give me any information with regard to practising at Monte Carlo. (1) Is the M.R.C.S., L.R.C.P. London accepted? (2) Is an M.D. degree necessary? and (3) If so, is the M.D. Brux recognised? I should feel greatly obliged for any information on the above. I am, Sirs, yours faithfully.

Feb. 15th, 1900. R. S.

*** The right to practise in Monaco is held by permission of the Prince of Monaco, who gives it when he thinks fit and withdraws it when he thinks fit. The right is, in fact, a personal favour.—ED. L.

A GREAT OPPORTUNITY.

THE following advertisement has appeared in a Liverpool paper recently:—

"Friendly society, with about 250 members residing in Liverpool and district, require the services of a qualified Medical Officer from the 1st of April next; must reside in a central part of Liverpool.—For particulars apply to Wm. Stainton, Pilotage Office, Liverpool."

In answer to the advertisement a medical man wrote for particulars and received the following letter from the Liverpool Pilot's Benevolent Society:—

Duties, &c., of Medical Officer.

Rule No. 13.—"The Surgeon for the time being shall attend and provide at his own expense all medicines to any member of the society when called upon or requested by the stewards or other officers of the society. Should he be engaged with other patients and unable to attend personally he shall provide a substitute within an hour from the time of notice being left at his residence."

Medical certificates free when required. Members reside in Liverpool or the suburbs and are employed in the Liverpool Pilot Service or are pensioned therefrom.

Salary £20 per annum, payable half-yearly.

23/1/1900. W. STAINTON.

We wonder how large the benevolent society is that gives such an income to its medical officer. It seems to us that if this functionary were to happen to be engaged with other patients once a week or so when the pilots wanted him, he would have to discharge his duties at pecuniary loss to himself.

THE CHOICE OF AN OPHTHALMOSCOPE.

To the Editors of THE LANCET.

SIRS,—Would some of your readers tell me what ophthalmoscope they consider probably the most suitable for a country practitioner? In the lists of instrument makers there seems to be very many and I am in doubts which to purchase. A word in THE LANCET would be esteemed. I am, Sirs, yours faithfully,

Feb. 17th, 1900. A READER.

MEDICAL ATTENDANCE IN BOURNEMOUTH.

IN a recent issue of the *Bournemouth Guardian* appears the following letter:—

LOCAL DOCTORS.

SIR,—In Bournemouth—even with its hundred doctors—there is the utmost difficulty between 10 A.M. and 1 P.M. and 3 P.M. and 6 o'clock in getting any doctor at all. They are all out on their rounds.

I have often been on the point of writing to you on this subject. Just now the alarming *hiatus* was brought home to me in the road at noon by a breathless inquiry where a doctor could be found. The applicant had been to several doctors' houses; none of the medicos were at home.

Surely this ought not to be. The faculty, amongst themselves, should by telephone and otherwise have such an inter-communication that a medical man could at any moment be procured.

Judging by equipages, doctors, though they work hard, do not fare ill in Bournemouth; and they owe something to the body politic for shelter and affluence. Not to be able to procure a doctor for at least six hours out of 24 in a town which (in the main) owes its success to the invalid is surely little less than a scandal.

February, 1900. ONE OF THE AILING.

Now this is an excellent instance of how the average ailing person regards a medical man—namely, as someone who should always be at his particular beck and call. A medical man has his set times for

being at home and they are perfectly well known to the majority of his patients. Thus they can find him if they go to him. But it does not seem to have struck "One of the Ailing" that a medical man who could be procured at any moment is an impossibility. Supposing that the "breathless inquirer" had found a medical man at home. The medical man would have at once attended the summons. By so doing he would have put it out of his power to attend to a second breathless inquirer. Unless "One of the Ailing" is prepared to subsidise a kind of central medical office where there shall be kept a relay of medical men, so that there shall always be at least one available to go out, we fear he will have to possess his soul in patience. We do not understand the contention that the Bournemouth medical men "owe something to the body politic for shelter and affluence." Surely the Bournemouth invalid is not so altruistic as to be ill on purpose to feed and shelter his medical attendant? The idea that a medical man is bound to attend to any summons at once and also bound to be always at home is not uncommon—if at least we reduce popular demands to their ultimate results; but it must be remembered that medical men, like Cabinet Ministers, are only human, and sometimes very human.

A FUNNY FELLOW.

To the Editors of THE LANCET.

SIRS,—Excuse the liberty I take in asking you if you will send me privately or through your columns, which I will pay for, a good receipt for a pill, must be a female pill that will shift any obstructions in their sex without doing injury. I have just been looking at some of these advertisements in —— and other papers and believe there is good business to be done if you have only got the necessary means to advertise. What is a good tonic for weak men. There is one cure in —— without medicine or electricity. A chemist tells me it must be phosphorus. My botanic book speaks highly of helebore and extract of squirting cucumber for very obstinate patients though it must be given gradual. I enclose my address, &c. I want something safe and I know you will not recommend anything too violent.

Yours truly,

ADVERTISER.

*** We do not suppose this communication is a genuine one, but seeing that "a female pill that will shift any obstructions" would be an agent in the committing of criminal abortion we have decided to send Advertiser's letter to the police.—ED. L.

DIFFICULTIES UNDER THE INFECTIOUS DISEASES NOTIFICATION ACT.

To the Editors of THE LANCET.

SIRS,—I shall be much obliged for an authoritative opinion as to whether a Poor-law union or board of guardians is a "public body" as the term is used in the Infectious Diseases Notification Act. I hold a dual appointment as medical officer of a London Poor-law union, and as such I have to notify cases to the respective medical officers of health of two separate sanitary districts. In both cases I fill up the certificate as being given in the exercise of my practice as medical officer of this union and not in that of my private practice. In one case I always receive the fee of 2*s.* 6*d.* and in the other that of 1*s.* per case notified. Am I entitled to the fee of 2*s.* 6*d.* in each case or is it an act of generosity on the part of one of the local authorities referred to? The former seems to me to be the more likely hypothesis. Thanking you in anticipation,

I am, Sirs, yours faithfully,

Feb. 19th, 1900. SUBSCRIBER.

*** We should say that our correspondent is only *entitled* to a fee of 1*s.* if he sends in his certificate in the pursuance of the exercise of his profession as a Poor-law medical officer. But not a few sanitary authorities, as in the case mentioned, give the 2*s.* 6*d.* fee as for a certificate occurring in private practice.—ED. L.

OPEN-AIR SANATORIA FOR THE TREATMENT OF TUBERCULOSIS.

To the Editors of THE LANCET.

SIRS,—Could you kindly give me names and addresses and if possible terms of good sanatoriums for the outdoor treatment of phthisis? I am, Sirs, yours faithfully,

Feb. 17th, 1900. CHAS. DISNEY ROE, L.R.C.P. Edin.

*** Lists of these institutions were given in THE LANCET of Sept. 9th, 1899 (p. 724), and Sept. 23rd (p. 851). In Scotland there is Mr. Quarrier's sanatorium for necessitous patients at Bridge of Weir, Renfrewshire.—ED. L.

"A HEPATIC MUCOID CYST."

To the Editors of THE LANCET.

SIRS,—This case, reported in THE LANCET of Feb. 17th, is entirely wrong. The case occurred in my private practice, and on the death of the patient I asked for a post mortem, which his friends readily granted me. I asked Mr. M'Donnell to assist, which he did, and after the post mortem he kindly offered to examine the tumour and send a report of same up to your valuable paper, which offer I readily accepted, giving him written details of the case up to the patient's death, duly signed by me, leaving him to report on the tumour, &c. From the report in THE LANCET one naturally concludes that it was his case, thus giving a false impression. I thought it only fair to myself to inform you of this fact, trusting you will make a note of same in your next issue. I am, Sirs, yours faithfully,

C. HOWARD JACKMAN, L.R.C.P. Edin., &c.

Kyverdale-road, Stamford-hill, Feb. 17th, 1900.

*** Mr. M'Donnell informed us that the patient was Mr. Jackman's, so that we feel sure that he meant to make the fact clear in his article.—ED. L.

M.R.C.S., L.R.C.P.—Our correspondent will find the information he desires about motor-cars for medical men in THE LANCET of Sept. 9th, Oct. 14th, 21st, and 28th, Nov. 11th and 18th, and Dec. 2nd.

R. F. (Glasgow).—We know of none. The treatment of disease proceeds upon scientific methods and not upon the ideas of any one man.

"Face Burning."—We never prescribe. Our correspondent should consult her usual medical attendant.

Messrs. G. Reiss and Co.—We have no information concerning the gentleman mentioned.

Miss E. A. Smith.—Our correspondent is advised to consult her usual medical attendant.

G. P. V.—We shall discuss the subject in a coming issue.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Feb. 22nd, 1900.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb	Dry Bulb.	Remarks at 8.30 A.M.
Feb. 16	29·15	W.	0·42	79	48	38	40	42	Hazy
,, 17	29·21	S.W.	0·12	69	49	41	43	44	Cloudy
,, 18	29·25	W.	0·60	30	51	36	38	39	Cloudy
,, 19	28·73	S.W.	0·06	57	52	39	50	51	Raining
,, 20	28·79	S.W.	0·21	65	49	39	40	41	Cloudy
,, 21	29·45	N.W.	0·04	78	47	34	35	38	Fine
,, 22	29·35	S.W.	0·07	78	53	36	44	45	Cloudy

During the week marked copies of the following newspapers have been received: *Birmingham Daily Argus, West Morning News, Eastern Morning News, Dundee Advertiser, Manchester Guardian, East Anglian Daily Times, Liverpool Daily Post, Birmingham Daily Post, Scotsman, Pioneer Mail, Times of India, Sussex Daily News, Westminster Gazette, Herald (Barrow-in-Furness), Kent Argus, Citizen, Architect, Builder, Bradford Observer, Morning Herald, Jersey Times, Blackburn Daily Telegraph, York Herald, Leamington News, Glasgow Evening Times, Northern Guardian, Surrey Times, Leicester Daily Post, Yorkshire Post, Glasgow Herald, Sheffield Daily Telegraph, Scarborough Daily Post, Leeds Mercury, Wolverhampton Chronicle, Health, British Mercury, Brighton Gazette, Sanitary Record, Hertfordshire Mercury, Reading Mercury, West Australian, Express and Star, Barry Herald, Ceylon Observer, City Press, Mining Journal, Local Government Chronicle, Local Government Journal, Surrey Advertiser, Wilkes-Barre Times, Ceylon Standard, Middlesex Chronicle, Richmond Times, Gloucester Journal, Essex County Standard, Widnes Weekly News, Liverpool Courier, Todmorden News, &c., &c.*

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (26th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (27th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.).

WEDNESDAY (28th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Canc

THURSDAY (1st).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.) University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.).

FRIDAY (2nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.).

SATURDAY (3rd).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (26th).—MEDICAL SOCIETY OF LONDON.—8.30 P.M. Adjourned Discussion on the Pathology and Treatment of Appendicitis.

TUESDAY (27th).—CHILDHOOD SOCIETY (Library of the Sanitary Institute, 72, Margaret-street, W.).—8 P.M. Dr. F. Warner: The Elements of Early Training.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY (20, Hanover-square, W.).—8.30 P.M. Papers:—Dr. F. Parkes Weber: Acute Ménière's Symptoms in Spleno-medullary Leucocythæmia, with special reference to the Anatomical Changes found in Acute Leucocythæmic Affections of the Ear, including a Pathological Report on the present case by Mr. R. Lake.—Dr. H. Thursfield: The Skin Affections met with in Bright's Disease.

WEDNESDAY (28th).—DERMATOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND (20, Hanover-square, W.).—4.30 P.M. Informal Exhibition of Cases. 5 P.M. Ordinary Meeting.

THURSDAY (1st).—CHILDHOOD SOCIETY (7, St. James'-square, S.W.).—4 P.M. Annual Meeting. Rev. T. W. Sharpe: Address.

FRIDAY (2nd).—WEST LONDON MEDICO-CHIRURGICAL SOCIETY (West London Hospital, Hammersmith, W.).—Clinical Evening. The following Cases will be shown:—Mr. C. B. Keetley: (1) Radical Cure of Hernia 10 years after Operation; (2) Case of Excision of the Pylorus.—Dr. U. Pope: (1) Case of Bradycardia in a Child; (2) Case of Abscess of Spleen cured by Drainage.—Dr. S. Taylor: Case of Palsy of the Sixth, Seventh, and Eighth Cranial Nerves.—Dr. Abraham: Two Cases of Disease of the Skin.—Mr. Bidwell: (1) A Case of Nephro-lithotomy; (2) Two Cases of Pyloroplasty.

LARYNGOLOGICAL SOCIETY OF LONDON (20, Hanover-square, W.).—5 P.M. Cases and Specimens will be shown by the following:—Sir Felix Semon, Dr. Horne. Dr. Potter, Dr. Powell, Dr. StClair Thomson, Mr. Heath, Mr. Lake, Mr. Robinson, and Mr. Waggett.

WEST KENT MEDICO-CHIRURGICAL SOCIETY (Royal Kent Dispensary, Greenwich-road, S.E.).—8.45 P.M. Exhibition of Clinical Cases, Specimens, &c. (Living Cases will be shown first):—Dr. McCann and Dr. Ezard: Case of Ruptured Ovarian Cyst.—Dr. Adkins: A Case of Enteric Fever in which the whole of the Ulcers were transversely placed and Peyer's Patches not much affected.—Dr. Toogood: Cases from Lewisham Infirmary.—Mr. C. Williams: (1) Case of Caries of the Spine; (2) Cast, Specimen, and Skiagraph of Case of Congenital Hypertrophy of Great and Second Toes. Council Meeting.

SOCIETY OF ANÆSTHETISTS (20, Hanover-square, W.).—8.30 P.M. Adjourned Discussion on the After-effects of Ether Inhalation on the Respiratory System (re-opened by Dr. Dudley Buxton).

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (26th).—ROYAL COLLEGE OF SURGEONS OF ENGLAND.—4 P.M. Prof. A. Keith: The Results of an Investigation of the Anatomy of Man and Higher Primates to determine more accurately the Relationship of Man to Living and Extinct Forms.

LONDON THROAT HOSPITAL (204, Gt. Portland-street, W.).—4.30 P.M. Dr. Cathcart: Chronic Glandular Diseases of the Nose and Naso-pharynx. (Post-Graduate Course.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street W.C.).—4 P.M. Mr. M. Morris: Consultation. (Skin.)

TUESDAY (27th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. C. T. Williams: Consultation. (Medical.)

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, W.C.).—3.30 P.M. Mr. Ballance: Surgery of the Nervous System.

WEDNESDAY (28th).—ROYAL COLLEGE OF SURGEONS OF ENGLAND.—4 P.M. Prof. A. Keith: The Results of an Investigation of the Anatomy of Man and Higher Primates to determine more accurately the Relationship of Man to Living and Extinct Forms.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN (Leicester-square, W.C.).—4.30 P.M. Dr. T. D. Savill: Lupus Erythematosus. (Post-graduate Course.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—5 P.M. Dr. P. Manson: Malaria Parasites and Malarial Disease.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Dr. H. Mackenzie: Pulmonary Cavities.

THURSDAY (1st).—WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM (73, Welbeck-street, W.).—5 P.M. Clinical Demonstration:—Dr. D. Grant: Cases of Aural and other Forms of Vertigo.

THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Dr. F. E. Batten: Demonstration of Selected Cases.

CHARING-CROSS HOSPITAL.—4 P.M. Mr. Gibbs: Demonstration of Surgical Cases. (Post-graduate Course.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. J. Hutchinson: Consultation. (Surgical.)

FRIDAY (2nd).—ROYAL COLLEGE OF SURGEONS OF ENGLAND.—4 P.M. Prof. A. Keith: The Results of an Investigation of the Anatomy of Man and Higher Primates to determine more accurately the Relationship of Man to Living and Extinct Forms.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. H. Spicer: Consultation. (Eye, Ear, Nose and Throat.)

EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE, OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. II. of 1899, which was completed with the issue of Dec. 30th, and the Title-page to the Volume were given in THE LANCET of Jan. 6th.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1899 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

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WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will ensure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

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The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied. Address—THE MANAGER, THE LANCET OFFICES, 423, STRAND, LONDON, ENGLAND.

BINDING

Communications, Letters, &c., have been received from—

A.—Dr. J. Armstrong, Liverpool; Messrs. Armour and Co., Lond.; Mr. Abbott, Tunbridge Wells; Dr. A. W. M. Auden, Leigh; A. D. La T.

B.—Mr. R. D. Boase, Penzance; Bradford and West Riding Medical Union, Hon. Secretary of; Mr. E. Burney Young, Lond.; Messrs. Brand and Co., Lond.; Messrs. Bates Hendy, and Co., Reading; Birmingham Ear and Throat Hospital Secretary of; Messrs. Burroughs Wellcome and Co., Lond.; Messrs. H. K. Bushell and Sons, Reading; Buntingford House Retreat, Herts Medical Superintendent of; Sir T. Lauder Brunton, Lond.; Bristol Royal Hospital for Sick Children, Secretary of; British Colonial and Foreign Press Cutting Agency, Lond., Secretary of; Mr. C. Birchall, Liverpool; Mons. O. Berthier, Paris; Bell, Surbiton; Bradford Royal Infirmary, Secretary of.

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N.—Dr. Richd. Neale, Lond.; Nottingham General Hospital, Secretary of.

O.—Mr. J. Oldfield, Lond.; Dr. James Oliver, Lond.; Mr. J. Offord, Lond.

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